

The Determinant Factors of Capital Structure in Cyclical Sector: Empirical Study from Indonesia

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ABSTRACT

This study aims to test seven internal factors determining capital structure using trade-off theory in the consumer cyclical sector in Indonesia. The research sample used a purposive sampling of 15 companies with 225 observations. Generalized Method of Moment analysis method for panel data. The research found that significant firm growth and size were proven. Tangible assets, non-debt tax shield, growth opportunity, and significant earning volume were not proven, and profitability was not significant. Investors can make the right decisions regarding ownership of company shares to sell or buy. In addition, potential investors can invest their funds by considering the company's high debt costs, which results in financial distress costs. The findings provide an overview for company managers in making decisions to achieve an optimal capital structure.



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Keywords: Trade-Off Theory; Capital Structure; Cyclical Sector

INTRODUCTION

The analysis of capital structure decisions is a crucial topic in financial literature and has been the focus of a lengthy discussion on funding sources (Panda & Nanda, 2020; Orlova et al., 2020). This research is required to address internal company characteristics as predictors of the results of the capital structure inquiry. Empirically, the results did not support the predictions of one theory, and their application to the industrial sub-sector has not received sufficient attention (Kumar et al., 2017; Hang et al., 2018; Bajaj et al., 2020). This research reacted to the analysis by identifying seven capital structure determinants whose findings were less convincing, including asset tangibility variables, non-debt tax shares, company growth, growth opportunities, firm size, profits volatility, and profitability (Hang et al., 2018). This study assessed seven variables under the trade-off theory (TOT), a single theory. Various mixed corporate capital structure theories, including Pecking Order Theory, Market Timing Theory, and Agency Theory, were used to test prior empirical studies. Specifically, this study explores a single theory called the trade-off theory.

Capital structure is the balance between the level of debt and the company's capital (Frank & Goyal, 2009; Khémiri & Noubbigh, 2018). Many previous studies have focused on capital structure decisions (Titman & Wessel, 1988; Rajan & Zingales, 1995; Harris & Raviv, 1991; Frank & Goyal, 2009; Graham & Leary, 2011; Cole, 2013; Öztekin, 2015; Hang et al., 2018). The results of previous empirical findings have documented many internal company factors tested as a determinant of capital structure. Existing empirical studies still show mixed results

on the determinants of capital structure on variables such as profitability (Alalmi et al., 2020; Loan et al., 2020), size (Bilgin & Dinc, 2019; Panda & Nanda, 2020), tangibility (Kuč & Kaličanin, 2020; Li & Islam, 2018), liquidity (Khémiri & Noubbigh, 2018; Vo, 2016), Firm growth (Harris & Roark, 2018; Sikveland & Zhang, 2020), Growth Opportunity (Dogan et al., 2019; Panda & Nanda, 2020), non-debt tax shield (Moradi & Paulet, 2018; Saif-Alyousfi et al., 2020) have limitations. It continued to provide inconsistent conclusions that were in keeping with the research findings. (Hang et al., 2018).

Results from earlier research have only ever been tested empirically using a combined capital structure theory lens. In particular, straining under a single theory, namely the trade-off theory of the seven determinants of capital structure, has never been discovered. As a result, examining a single hypothesis to account for the seven elements influencing capital structure decisions would not provide a comprehensive picture of the financial literature.

By adding to the corpus of corporate finance research, this study sought to fill in the gaps in investigative findings (Hang et al., 2018; Kumar et al., 2017). With just one test of the trade-off hypothesis, it initially attempted to address the query of the research outcomes that still need confirmation. Second, the test was run on Indonesia's Cyclical Industrial Sector, which has unique features based on macro circumstances and conditions. Regardless of the state of the economy, the cyclical industry consistently outperformed the average for all other sectors in terms of profitability. The sector had significant losses as well, so it was not defensive.

Section two of this paper covered a literature review and hypothesis development; section three covered research methodology, protected population identification, research samples, and model analysis. Section four covered descriptive statistical analysis. Section five covered the discussion of the findings. Section six covered conclusions and implications.

LITERATURE REVIEW

Previous research has thoroughly evaluated the variables that affect capital structure with the use of significant theories such as the pecking order theory (Myers, 1984; Myers & Majluf, 1984), trade-off theory (Kraus & Litzenberger, 1973), and market timing theory (Baker & Wurgler, 2002). Agency theory (Jensen & Meckling, 1976), free cash flow theory (Jensen, 1986), and signaling theory (Ross, 1977) were additional supportive theories. In practice, this theory has aided financial academics in their research of the capital structure decision-making of businesses. However, as finance research matured, the theory's application to concurrent investigations encountered limitations.

Using the same two assumptions, Kraus and Litzenberger (1973) created a trade-off theory model that considered the advantages of using debt for tax reduction and the costs of using debt for bankruptcy. According to Modigliani and Miller (1963), interest costs result from decreased taxation, making debt the only funding source for the capital structure. As debt cannot be used to finance a company's operations, bankruptcy costs must be combined (Robichek & Myers, 1966; Stiglitz, 1972; Scott, 1976; Bradley et al., 1984). This circumstance will produce an ideal capital structure choice target.

The current study's outcomes have demonstrated that various factors influenced the selection of financing options. Thus, the seven factors determining capital structure were the tangibility of assets, the non-debt tax shield, business growth, growth opportunities, firm size, earnings volatility, and profitability. The observed variables were constrained by considering that other factors have consistently acted as drivers of capital structure.

Asset tangibility

According to the trade-off theory, there is a beneficial correlation between asset tangibility and leverage. Because they may serve as loan guarantors in the event of liquidation, businesses with significant structures of tangible assets can secure external finance through debt (Frank & Goyal, 2009; Cole, 2013). In this research, asset tangibility was measured by the net tangible fixed assets ratio divided by total assets (Harris & Roark, 2018; Li & Islam, 2018; Kufç & Kalifçanin, 2020; Panda & Nanda, 2020). The research results found positive relationships such as (Vo, 2016; Khémiri & Noubbigh, 2018; Li & Islam, 2018; Bilgin & Dinc, 2019; Moradi & Paulet, 2018; Panda & Nanda, 2020; Saif-Alyousfi et al., 2020). Another research reported a negative relationship between tangible assets and capital structure (Gunardi et al., 2020; Alalmi, 2020; Kuč & Kaličanin, 2020, 2020; Sikveland & Zhang, 2020). Based on the theoretical framework of trade-off, the first hypothesis is proposed as follows:

H1: Asset tangibility was positively related to capital structure.

Non-debt tax shield

Financial literature from the past calculated this variable as depreciation expense divided by total assets. (Bradley et al., 1984; Titman & Wessel, 1988; Hang et al., 2018). The trade-off theory predicts a negative relationship between capital structure and non-debt tax shares. Utilizing tax deductions for loan interest payments and cost of return on investment allows businesses to reduce the need for external capital. (Khémiri & Noubbigh, 2018; Moradi & Paulet, 2018). Previous research found a negative relationship (Moradi & Paulet, 2018; Saif-Alyousfi et al., 2020; Panda & Nanda, 2020; Alalmi, 2020). Other research results found a positive relationship (Khémiri & Noubbigh, 2018; Bilgin & Dinc, 2019; Ramli et al., 2018). Based on the theoretical framework of trade-off, the second hypothesis was proposed as follows:

H2: Non-debt tax shield was negatively related to capital structure.

Firm growth

The firm growth variable is measured using a proxy for changes in sales at (t_0) compared to (t_{1-1}) minus 1 (Titman & Wessel, 1988; Margaritis & Psillaki, 2010; Pacheco & Tavares, 2016). The trade-off theory states a conflict between capital structure and company expansion. Managers prevent favorable investment returns by avoiding debt funding sources due to the firm's rapid expansion and the high cost of financial turmoil. (Dogan et al., 2019; Khémiri & Noubbigh, 2018). Previous research confirmed the negative association results (Hang et al., 2018; Khémiri & Noubbigh, 2018; Moradi & Paulet, 2018; Saif-Alyousfi et al., 2020). Based on the framework of the trade-off theory, the third hypothesis is formulated as follows:

H3: Firm growth was negatively related to capital structure.

Growth Opportunities

According to the trade-off hypothesis, capital structure should be adversely correlated with growth prospects. Owning intangible assets as a growth indicator that depreciates due to financial hardships and challenges in achieving money and measures represents the company's possibility for development and reduces the need for debt financing. (Cole, 2013; Panda & Nanda, 2020). The results of previous research found negative relationships such as (Kieschnick & Moussawi, 2018; Hang et al., 2018; Dogan et al., 2019; Orlova et al., 2020; Alalmi et al., 2020; Panda & Nanda, 2020). The ratio of asset market value to asset book value was used to measure this study variable. (Hang et al., 2018; Rajan & Zingales, 1995). Based on the trade-off theory framework, the fourth hypothesis is formulated as follows:

H4: Growth opportunity was negatively related to capital structure.

Firm Size

The firm size variable is measured using the logarithmic proxy of the total (Titman & Wessel, 1988; Rajan & Zingales, 1995; Hang et al., 2018). To lower the cost of financial issues and excessive debt ratios that assure corporate stability and liquidation, firms diversify, intending to grow their size. (Titman & Wessel, 1988; Frank & Goyal, 2009). Previous research found a positive relationship (Li & Islam, 2018; Moradi & Paulet, 2018; Bilgin & Dinc, 2019; Kuč & Kaličanin, 2020; Loan et al., 2020; Panda & Nanda, 2020). Previous research reported a negative relationship between firm size and capital structure (Dogan et al., 2019; Sikveland & Zhang, 2020). Based on the trade-off theory, the fifth hypothesis can be formulated as follows:

H5: Firm size was positively related to capital structure.

Earnings Volatility

By measuring the standard deviation of income before interest and taxes, earnings volatility serves as a proxy for the company's business risk. (cKöksal & Orman, 2014; Hang et al., 2018). According to the trade-off theory, capital structure and profit volatility should have a bad connection. This circumstance shows the company's high debt usage causes large profit fluctuation. Along with a decline in income, it affects the company's business risk. The findings of earlier studies revealed such a detrimental link. (Matemilola et al., 2017; Hang et al., 2018; Khémiri & Noubbigh, 2018; Kuč & Kaličanin, 2020). Based on the framework of the trade-off theory, the sixth hypothesis can be formulated as follows:

H6: Earning volatility was negatively related to capital structure.

Profitability

According to the trade-off theory, profitability and capital structure have a favorable connection. Higher external financing requirements indicate that more successful businesses can take advantage of tax deferral arrangements and pay fixed capital and interest expenses (Ardalan, 2017; Vo, 2016; Khémiri & Noubbigh, 2018). Previous research found such a positive relationship (Chadha & Sharma, 2015; Pepur et al., 2016; Li & Islam, 2018; Hang et al., 2018;

Loan et al., 2020). This study determined profitability by dividing income before taxes and interest by total assets. (de Jong et al., 2008; Hang et al., 2018). Based on the arguments of the trade-off theory, the seventh hypothesis is proposed as follows:

H7: Profitability was positively related to capital structure

RESEARCH METHOD

The population of companies in Indonesia's Consumer Cyclical Sector as of 2005 served as the basis for this study's design. Fifty-six businesses were observed from 2005 to 2019 throughout this time. Purposive sampling was employed to determine the sample, and the following standards were utilized: (1) During the observation period, the company provides financial accounts; (2) the observed firm generates revenue. Two hundred twenty-five (225) observations from 15 businesses served as the sample criterion in this study.

Table 1. Variables Definitions and Measurement

Variables	Definition	Measurement
CS	Earning After Taxes divided Total Asset	EAT/TA
ASTG	Fixed Asset divided by Total Asset	FA/TA
NDTS	Depreciation divided by Total Asset	DEP/TA
FGOW	Change of percentage of Total Asset	TA-TA-1/TA-1
GOPP	Tobin's Q	MV/BV
SIZE	Natural Logarithm of Total Asset	Ln(TA)
EVOL	(Profit before taxes t – Profit before taxes t-1)/ Profit Before Taxes t-1	PBT t – PBT t-1/PBT t-1
PROF	Net profit after taxes / Total Asset	NPAT/TA

The Generalised Method of Moment (GMM) was used in this study to assess the hypotheses that were created, and the following model specifications were used:

$$CS = \beta_0 + \beta_1ASTG - \beta_2NDTS - \beta_3FGOW - \beta_4GOPP + \beta_5FSIZE - \beta_6EVOL + \beta_7PROF$$

Detail: β_0 - β_7 : Coefficient of independent variables; CS : Capital Structure; ASTG : Asset Tangible; NDTS : Non-debt tax shield; FGOW : Firm growth; GOPP : Growth Opportunity; FSIZE : Firm Size; EVOL : Earning volatility; PROF : Profitability

RESULTS AND DISCUSSION

The characteristics of the internal firm components detected in the cyclical sector are explained in Table 2 and include tangible assets, non-debt tax shield, firm growth, growth potential, company size, earnings volatility, and profitability. The company's internal characteristics generally indicated that the mean score was more significant than the median, except for the firm size variable, where the mean score, 13.41, was lower than the median. The debt-to-asset ratio, which served as a proxy for the capital structure variable as the dependent variable, displayed a comparatively high mean score of 41.72%. According to descriptive statistics, businesses in the cyclical sector tended to have mean scores higher than the median value.

Table 2. Summary of descriptive statistics

Number	Variable	Mean	Median	Standard Deviation
1	CS	41,72	41,01	18,52
2	ASTG	31,61	29,51	15,13
3	NDTS	3,02	2,91	1,89
4	FGOW	0,19	0,09	1,37
5	GOPP	1,76	1,04	2,89
6	FSIZE	13,41	13,74	2,29
7	EVOL	0,02	-2670	91012,69
8	PROF	10,75	8,35	9,02

The generalized method of the Moment model was used in this study instead of the more traditional assumption testing to assess hypotheses. In Table 2, the outcomes of the hypothesis testing are presented as statistical t-coefficients.

Table 3. Hypothesis test results

Variable	Coefficient t-statistic	Hypothesis
C	-31,7611 (-4,3662)	
ASTG	-0,7007 (-2,1975)**	H1: Not supported
NDTS	3,8145 (3,6615)***	H2: Not supported
FGOW	-13,5954 (-1,7795)*	H3 : supported
GOPP	3,3461 (2,7142)***	H4: Not supported
FSIZE	6,6731 7,5934)***	H5 : supported
EVOL	0,0002 (3,0003)***	H6: Not supported
PROF	-0,5302 (-1,3766)	H7:Not supported

***Sign: 1%

**Sign: 5%

*Sign: 10%

Table 3 presents the results of hypothesis testing on seven internal company factors as determinants of capital structure. The results prove significant except for the Firm Growth and Firm Size variables, which prove significant. Trade-off theory predicts that the relationship between tangible assets and capital structure is positive, but the results found the opposite. The relationship between tangible assets and capital structure is negative and significant at the 5% level, which indicates in the cyclical consumer sector that an increase in long-term assets causes the largest decrease in debt levels for this sector. These findings align with previous studies (Alalmi et al., 2020; Gunardi et al., 2020; Kuč & Kaličanin, 2020; Sikveland & Zhang, 2020). The Non-debt tax shield variable shows a significant coefficient value at the 1% level even though it has a positive sign. The trade-off theory postulates a negative relationship between the

non-debt tax shield and capital structure. The results found are contradictory and do not match the theory's predictions. This finding indicates that the cyclical consumer sector still has low investment originating from cash inflows in the form of depreciation, so it still requires external funding sources in the form of debt. The research results align with previous studies (Bilgin & Dinc, 2019; Khémiri & Noubbigh, 2018; Ramli et al., 2018).

Furthermore, the firm growth variable shows significant results at the 10% level. It is consistent with the trade-off theory, stating that the cyclical consumer industry sector has higher growth opportunities. It incentivizes managers to invest sub-optimally or accept risky projects that transfer wealth from debt holders to shareholders.

The relationship between firm growth and capital structure is negative. Proxied by sales growth, firm growth has many alternative internal funding sources, thereby reducing debt. This study aligns with the study results (Hang et al., 2018; Khémiri & Noubbigh, 2018; Moradi & Paulet, 2018; Saif-Alyousfi et al., 2020). The growth opportunity variable shows significant results at the 1% level even though it has a positive sign that does not follow the trade-off theory predictions. These findings indicate that consumer cyclical companies have low growth opportunities, so they require external funding sources in the form of high debt. The research results align with previous studies (Adland et al., 2017; Li & Islam, 2018). The relationship between Firm Size and capital structure shows a positive and significant coefficient at the 1% level, consistent with the predictions of trade-off theory. The results of this research are supported by previous studies (Bilgin & Dinc, 2019; Kuč & Kaličanin, 2020; Li & Islam, 2018; Loan et al., 2020; Moradi & Paulet, 2018; Panda & Nanda, 2020). These findings indicate that companies in the consumer cyclical sector can borrow more because companies that can borrow more can be more diversified, which has lower bankruptcy costs and can ensure a positive relationship between company size and capital structure.

The Earning volatility variable has a relationship with capital structure with a significant coefficient value at the 1% level, even though it has a positive sign. This finding implies that the higher the volatility of earnings, the higher the level of debt because companies in the consumer cyclical sector do not use debt funding sources to protect against financial difficulties and the risk of bankruptcy. This condition results in the risk of liquidity inadequacy. Previous studies have been consistent with the trade-off theory, but the study results are similar to the findings (Sheikh & Qureshi, 2017; Saif-Alyousfi et al., 2020; Khan et al., 2021). They found positive results on capital structure. These results do not follow the predictions of the trade-off theory, which states that the relationship between the two variables is negative. Finally, profitability does not affect capital structure, resulting in capital structure decision-making. Negative profits and insufficient internal funds indicate the need for external funding and consumer cyclical companies to increase capital through debt to finance the company's investment opportunities. Previous studies have been consistent with the trade-off theory, but the study results are similar to the findings (Rashid et al., 2023s; Sohrabi & Movaghari, 2020). get negative results on the capital structure. These findings do not follow the predictions of the trade theory, stating that the relationship between these two variables is positive.

CONCLUSION

Making judgments on the capital structure of the company's finances was a key strategy. Alternative finance, the company's financial investment portfolio, and other external elements that were expected to boost business performance were extremely heavily influenced by internal issues. This study examined the seven internal firm components determining a company's capital structure and the funding features in Indonesia's cyclical economy. Based on the results, the firm's size and expansion rate influenced financing selections the most. Furthermore, additional elements, including physical assets, a non-debt tax shield, growth potential, and income volatility, were also considered as determinants of capital structure decisions, and profitability was not considered to determine the amount of corporate debt.

These findings might give investors or potential investors a more detailed explanation of the facts, particularly about capital structure choices in Indonesia's cyclical industry. Investors might choose whether to acquire or sell their ownership of company shares. Additionally, prospective investors may decide where to put their money by considering the high cost of debt incurred by the company and the cost of financial issues. The study's findings gave the company's management a broad picture to guide their decision-making in achieving the ideal capital structure.

One of the study's weaknesses was the sample of enterprises that produced profits each period as the determining elements for the firm's capital structure. Hopefully, future studies will include samples of businesses that have experienced losses to add units of company analysis, allowing for a more comprehensive picture. Furthermore, this study considered debt as a proxy for capital structure. Further investigation may use different capital structure proxies, such as company equity.

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