# Determinants of Capital Structure: Empirical Study of Consumer Goods Listing Firm in Indonesia Capital Market

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## Abstract

Capital Structure is one of the most researched topics by academics and professionals because it has a direct influence on the enterprise stock value. Many studies have discussed the determinants of capital structure, but the results are still mixed. This paper aims to determine factors affecting the capital structure of consumer goods companies listed in the Indonesia capital market during 2016–2020. This research is a type of applied research with a quantitative approach. This paper use panel data regression with a random effect model to achieve the research goal with sample size is 36 firms selecting by using the purposive sampling technique. The results show that liquidity has a negative effect on the company's capital structure in the consumer goods industry, meanwhile, firm growth and business risk have no effect on the company's capital structure. This condition shows the relevance of the pecking order hypothesis in explaining the determinants of the firm's capital structure in the consumer goods industry

**Keywords**: capital structure, liquidity, firm growth**,** business risk, consumer goods

## Introduction

The capital structure has a significant part in the firm because it indicates the way the firm in financing its assets, which is a mix of equity and debt the financial structure decision process is closely related to the level of profits and possible losses that will be faced by the company's shareholders. Therefore, management must decide the right capital structure for the company to ensure the sustainability of the firm in the future. The process of determining the firm's capital structure still mostly refers to the two modern capital structure theories suggested by Modigliani and Miller (1963) with the trade-off.theory, and Myers and Majluf (1984) with the pecking order theory.

Trade-off theory puts forward the important role of debt that can reduce the tax from interest and suggest companies consider both the expense and profit of using debt and equity to meet the company's capital needs and set a target debt ratio in the company's capital structure. The greater use of debt, the higher the value of the firm, which means the higher the share price. The reason is that the interest on the debt that will be paid can reduce the taxes paid by the firm. This tax savings is a shareholder benefit so that the value of the company increases which is reflected in the increase in stock prices. The trade-off model is a model that is very consistent with efforts to find the firm best capital structure, and then the value of the firm can be maximized. This model has many adherents, so it is still considered as the mainstream of capital structure theory. However, this model cannot answer various important findings from the pattern of the firm's capital structure. The trade-off model has the implication that managers will think in terms of trade-offs between tax savings and bankruptcy fee in determining capital structure. But in reality, it seems that it is rare for financial managers to think like that.

Pecking order theory states that firm's prefer inside financing that is funding from the company's operating results in the form of retained earnings. If external funding is needed, the company will issue the secure securities first, starting with the issuance of bonds, then followed by securities with option characteristics, and finally, if it is still insufficient, will issue new shares. Therefore, the order of use of funding sources according to the pecking order model is internal funds, debt, and equity. Inside funds are preferred over outside funds because inside funds allow companies to not have to "open up again" from the spotlight of outside investors. In addition, the influence of asymmetric information and the fee of issuing shares tend to encourage pecking order behavior (Myers and Majluf, 1984). The pecking order theory is also relatively the same as the trade-off theory, which apparently cannot define all the findings of the capital structure pattern.

Some of research's try to analyze the determinants of the firm's capital structure but the result are still varied (Ko¨ksal & Orman, 2014; Gomez, Rivas & Bolan˜os, 2014; Šarlija & Harc, 2012). Variables that are widely studied by a number of researchers as determinants of capital structure are liquidity (Gomez, Rivas & Bolan˜os, 2014; Šarlija & Harc, 2012; Sharma & Paul, 2015; Anderson & Carverhill, 2012), firm growth (Ko¨ksal & Orman, 2014; Gomez, Rivas & Bolan˜os, 2014; Fauzi & Basyith, 2013) and business risk (Titman and Wessels, 1988; Viviani, 2008; Su, 2010; Ezeoha, 2011). This investigation was conducted to ferret out the determinants of the company's capital structure in the consumer goods industry listed on the Indonesian capital market during the 2016 - 2020 periods by using the variables of liquidity, firm growth, and business risk as previously studied by many researchers.

## Literature Review

### Liquidity and Capital Structure

Liquidity is a company asset that can be converted into cash. Every company will try to maintain its liquidity in the company's operational activities. The level of liquidity display the firm's capability to fulfill its current obligations. Asset liquidity can limit the company's optimal debt amount and its debt is also determined by the average use of debt in a certain industry (Williamson, 1988). The level of asset liquidity is highly dependent on the assessment, whether the asset value is said to be liquid by taking into account the liquidation worth of the company's assets or by looking at the selling price of assets throughout the whole life of the company (Morallec, 2001). The level of utilize of debt in companies with high levels of liquidity will be low in the capital structure because equity is more attractive when compared to debt (Udomsirikul, et. al., 2011). Frieder and Martell (2006) argue that the use of debt in companies that have a high level of liquidity will be lower in the capital structure. Different opinions expressed by Panno (2003) mention that The company is likely to support the use of larger debt because it has high liquidity which can be used as evidence that the company has a greater capability to fulfill its financial responsibility. Although his opinion differs from the pecking order theory which states that firms with high levels of liquidity will have low levels of debt, Panno (2003) explains that liquidity has a positive effect on the firm debt level decisions in the U.K. and in accordance with the theory of expectations. Sibilkov (2009) who conducted research on U.S. companies also found that liquid assets can increase the company's leverage and debt.

Several study detection denote that a positive connection among liquidity and firm capital structure (Panno, 2003; Jensen, 1986; Mateev, Poutziouris & Ivanov, 2013). Research performed by Myers & Rajan (1998); Eriotis, et. al. (2007); Lipson & Mortal (2009) Šarlija and Harc (2012); Ukaegbu & Oino (2014); Sharma & Paul (2015); Gusni, et. al. (2020) detect that the negative link among liquidity and the firm’s capital structure. Refer to the above explanation, the first hypothesis is:

H1: Capital structure is negatively affected by liquidity.

### Firm Growth and Capital Structure

Firm growth is other of the company's concerns that can have a good influence on the firm. Firm’s that have higher growth will be able to generate the cash needed by the company in the future to increase its assets which are also needed to maintain company profits (Gomez, Rivas & Bolan˜os, 2014). Trade-off theory state that if retained earnings can encourage high growth, the company needs to use more debt so that as maintain an objective debt ratio for the company (Modigliani and Miller, 1963). This means that firm growth has a positive connection with capital structure. The same opinion was also conveyed by Myers and Majluf (1984) in the pecking order theory that if the company experiences a high increase in the cost of financial distress, the firm can issue shares to finance investment activities or pay debts

(Shyam-Sunder and Myers, 1999). The company's growth causes changes in the company's capital structure related to new funding needs by utilizing debt which is also needed to overcome agency problems.

Some of the research explains the relationship between firm growth and capital structure. Michaelas et al. (1999) mention that the link among firm growth and capital structure can be positive or negative. Bevan and Danbolt (2002); Chen (2003); Baskin (1989) found that a positive connection among firm growth and capital structure, that is companies with high growth also have high debt levels. Different research outcome indicate that firm growth has a negative effect on the capital structure (Deesomsak et. al., (2004); Antoniou et. al., (2008); Gaud et al (2005); Rajan & Zingales (1995); Harris & Raviv (1992)). Meanwhile, Titman & Wessels (1988) not found any connection among company growth and capital structure. Referring to the explanation above, the next hypothesis for this research is:

H2: Firm growth has a negative effect on the capital structure

**Business Risk terhadap Struktur Modal**

Business risk is predicted to have a close relation with the company's capital structure decisions as proven by a number of studies conducted by (Castanias, 1983; Brealy & Myers, 1988; Kale et al., 1991). Even so, a number of empirical evidence show that this relation, but it is still debated. Companies with a high level of risk have the possibility of experiencing greater financial difficulties, so it would be better to use a low level of debt in their capital structure as mentioned by the pecking order theory which expects a negative connection among business risk and capital structure, even though liquidation costs is higher (Bradleyet al. (1984); Castanias, (1983). Company managers won't use excessive debt in their capital structure because they avoid the potential for default due to high-income volatility (Mazur, 2007).

Some studies tried to analyze the correlation between business risk and capital structure, the result shows that an inverse relation (Flath & Knoeber (1980); Bradley et al. (1984); Friend & Lang (1988); Nwachukwu & Mohammed (2012)). The study performed by Myers (1977), Kim and Sorensen (1986), and Chu et al. (1992) found that a positive connection among business risk and capital structure. Titman and Wessels (1988) mention that there is no effect of business risk on the firm capital structure. Based on the explanation above, the reasearch next hypothesis is:

H3: Capital structure is negatively affected by business risk

**Research Methodology**

This research is applied research with a quantitative approach to analyze the determinants of capital structure in the consumer goods industry for the period of 2016 – 2020. In the way to achieve the aim of this study, the researcher used 39 firms as population and 36 companies as study sample selecting by using a purposive

sampling technique. Data used in this study is secondary data taking from the official website of Indonesia Capital Market.

This study using dependent and independent variables. Capital structure as a dependent variable of this study and independent variables consist of liquidity (Gomez, Rivas & Bolan˜os, 2014; Šarlija & Harc, 2012; Sharma & Paul, 2015; Anderson & Carverhill, 2012), firm growth (Ko¨ksal & Orman, 2014; Gomez, Rivas & Bolan˜os, 2014; Fauzi & Basyith, 2013) and business risk (Titman and Wessels, 1988; Viviani, 2008; Su, 2010; Ezeoha, 2011). Tabel 1 below shows all variables used in this study including it measurements:

Tabel 1. Research Variables and Measurements

| Variables | Symbol | Measurement |
|---|---|---|
| Dependent variable | | |
| Capital structure | CSTR | Total Liabilities / Total Equity |
| Independent variables | | |
| Liquidity | LQDS | Current Assets / Current Liabilities |
| Firm Growth | FMGH | $(\text{Total Asts}_t - \text{Total Assets}_{t-1})/(\text{Total Assets}_{t-1})$ |
| Business Risk | BSRK | $(EBIT^1\text{-}EBIT^{0)}/EBIT^0)/(Sales^1\text{-}Sales^{0)}/Sales^0)$ |

Panel data regression used in this research to testing hypotheses proposed. The regression equation model as below:

$CSTR = \alpha + \beta 1LQDS + \beta 2FMGH + \beta 3BSRK + e$

Where a is constant; β1, β2, β3, are regression parameters, meanwhile CSTR, LQDS, FMGH, and BSRK are dependent dan independent variables as explain in Tabel 1.

Testing of the regression model starts from the classical assumption test in accordance with the panel data, consisting of the multicollinearity test and the heteroscedasticity test. Hereinafter is the model test to find out that the regression model formed is correct, meaning that there is a linear relation amongst the independent variables and the dependent variable. The last test is a hypotheses test to attest the effect of liquidity, firm growth, and business risk individually on the capital structure.

**Research Result and Discussion**

**Result**

To achieve this study objective, the classical assumption test was carried out in accordance with the panel data, consisting of the multicollinearity test and the heteroscedasticity test. The outcome of the multicollinearity test show that there is no

multicollinearity problem among the LQDS, FMGH, and BSRK variables, as indicated by the VIF value less than 10 as shown in Tabel 2, which means that all independent variables in this regression model formed are mutually independent. The results of the heteroscedasticity test by using the Breusch Pagan Godfrey (BPG) method showed that the P-value obs*R-square of 3.2709 bigger than 0.05, which means that there is no heteroscedasticity problem.

In the way to find out the right panel data regression model is suiTabel for this study, whether it is a CE, FE, or RE model, the Chow, Hausman, and Lagrange Multiplier tests were carried out. The outcome denote that the suiTabel model for this study is the RE because it uses more cross-sectional data than time-series. The following are the outcome of the Random Effect Regression:

Tabel 2 Random Effect Model and Multicollonearity Test Results

| Variables | Result | Multikolonearitas (VIF) |
|---|---|---|
| Liquidity | -0.096662*** | 1.008011 |
| Firm Growth | -0.004890 | 1.001136 |
| Business Risk | 0.017203 | 1.007070 |
| Adjusted $R^2$ | 0.031799 | |
| F-statistic | 2.850167 | |
| Prob F-statistic | 0.039085 | |

*** sig. at 1%
Sources: Financial statement, statistic idx, processed data

The outcome of the statistical test show that the regression model in this research is fixed as indicated by the value of Probability F. statistic as shown in Tabel 2 above, which means that there is a linear relationship among the independent variables (liquidity, firm growth, and business risk) and the dependent variable (capital structure). The coefficient of determination test outcome explain that the ability of LQDS, FMGH, and BSRK in explaining changes in the CSTR variable is 3.18%, the remaining 96.82% is explained by other variables. This condition indicates that the regression model formed is still weak. Hypotheses test result denotes that LQDS has negative relation with CSTR, meanwhile FMGH, and BSRK has no effect on the CSTR in consumer goods industry listing at the Indonesia Capital Market.

**Discussion**

LQDS shows the availability of cash and other assets owned by the company. LQDS is the firm's capability to pay off short-term debt and investment activities that which can reduce the use of debt. The results of statistical tests on the first hypothesis denote that LQDS has a negative effect on the CSTR of the consumer goods industry listed on the Indonesia Capital Market for the 2016-2020 period. This condition is by following the concept of pecking order theory that states a high level of corporate liquidity will affect the company's management to use available cash funds and other current assets as a source of internal funding which will reduce the use of funds

sourced from equity and debt (external) to meet the need for the company's capital structure (Myers & Majluf, 1984; Udomsirikul, et. al., 2011). Furthermore, according to Butt et al., (2013), companies that have a high level of LQDS show the amount of internal funds is also high (Yudhatama & Wibowo, 2015:12)

The outcome of this research are in line with the findings of several previous researchers (Myers & Rajan (1998); Eriotis, et. al. (2007); Lipson & Mortal (2009) Arlija & Harc (2012); Ukaegbu & Oino (2014); Sharma & Paul (2015); Gusni, et al. (2020)). While the research conducted by (Bundala (2012); Mateev, Poutziouris & Ivanov (2013)) contradicts the results of this research, where CSTR positively effect by LQDS.

FMGH is the company's ability to increase the firm size which can be seen from changes in the company's total assets. Agency costs from free cash flow can be reduced if the company has high firm growth, so it does not depend on debt (Jensen, 1986). In accordance with the trade-off theory, when a company's FMGH is high, the use of debt in the capital structure will automatically be adjusted according to internal funds and when FMGH is low, the company tries to obtain external funding such as bank loans, bonds, or the capital market which aims to meet the needs of the company funds. The results of the second hypothesis testing in this study show that FMGH has no relation with CSTR. This condition shows that high or low firm growth does not affect changes in the CSTR decision of the consumer goods industry listed on the Indonesia Capital Market for the 2016-2020 period. Firm growth is not a determining factor for company management in making decisions on the company's CSTR. Capital structure decision’s are specified by the availability of company funds and company needs.

The outcome of this research are in line with the findings of Titman & Wessels (1988) who found that FMGH does not affect the CSTR. The findings of this study contradict those of several previous researchers who said that FMGH has a negative effect on the CSTR (Deesomsak et. al., (2004); Antoniou et. al., (2008); Gaud et al. (2005); Rajan & Zingales (1995); Harris & Raviv (1992)). The results of other studies (Bevan and Danbolt (2002); Chen (2003); Baskin (1989)) found that there is a positive influence among FMGH and CSTR.

BSRK is the uncertainty faced by a company in running a business and is one of the firm's CSTR decisions determinants. The higher the company's BSRK, the firm will be more careful in determining the CSTR, especially those from debt because it can cause the company to experience financial distress. Pecking order theory predicts a negative relation among BSRK and CSTR. In accordance with this theory, firms with high volatility try to raise cash over the years to avoid underinvestment in the future (Myers & Majluf, 1984). The outcome of hypothesis testing show that BSRK does not affect the firm's CSTR. This condition illustrates that BSRK does not play a role in specified the company's CSTR decisions in the consumer goods industry listed on the Indonesia Capital Market. BSRK is not a determining factor to decide the source

of funding for the company. The company will use funding sources by following the availability of company inside funds and the need for outside funds.

The outcome of this research are in line with the findings of Titman & Wessels (1988); Gusni, et al. (2020) state that there is no connection among BSRK and firm CSTR. The findings in this study are contrary to some previous research that states there is a negative relation among BSRK and CSTR (Flath & Knoeber (1980); Bradley et al. (1984); Friend & Lang (1988); Nwachukwu & Mohammed (2012)). Other studies (Myers (1977), Kim and Sorensen (1986), and Chu et al. (1992)) found that there is a positive influence among BSRK and CSTR.

## Conclusion

This study's aim is to define factors affecting the firm's CSTR in the consumer goods industry listed firm during the 2016 - 2020 period by using liquidity, firm growth, and business risk variables as previously studied by many researchers, but the result is still mixed. The outcome of the classical assumption test denote that the panel data regression model formed does not have multicollinearity and heteroscedasticity problems. Furthermore, testing of the regression model shows that the model form is correct, meaning that there is a linear relation among liquidity, firm growth, and business risk with the firm capital structure. The outcome of the coefficient of determination test denote that the regression model formed is still weak because the ability of the independent variable to explain changes in the dependent variable is less than 5%. The results of statistical testing on the hypothesis proposed in this study denote that only the LQDS has a negative effect on the company's CSTR, while FMGH and BSRK have no effect on the company's CSTR in the consumer goods industry. This condition shows that not all variables that are used as determinants of capital structure in different industries and places can be applied to the consumer goods industry. Overall, the outcomes of this research are closer to the pecking order theory when compared to the trade-off theory.

This research still has a number of limitations, so that further researchers are advised to add samples across industries and if possible, across countries so that the study results are more accurate and the scope of the discussion is wider. Furthermore, it is also recommended to use more independent variables that are thought to have a close relationship with the company's capital structure.

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