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Determinants of capital structure in Sharia criteria manufacturing firms on the Indonesia Stock Exchange

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Abstract

Theories and results of research on the determinants of a firm's capital structure provide different explanations and evidence. Sharia criteria companies on the Indonesia Stock Exchange (IDX) are not allowed to have a ratio of total interest-based debt to total assets of more than 45%, which predicted have an impact on the determinants of their capital structure. This research was conducted at Sharia criteria manufacturing companies on the Indonesia Stock Exchange in 2011-2017. The results of the analysis showed that only profitability had the same direction that is negative on the two capital structure measures, book leverage and market leverage. Growth opportunity and firm size have different effects on the two capital structure measures, which are a positive effect on book leverage and negative on market leverage. Tangibility, business risk, and inflation only affect market leverage. Tangibility and inflation have a positive effect on market leverage, while business risk has a negative effect. This study found no evidence that gross domestic product (GDP) affects leverage, both on book leverage and market leverage.

Abstrak

Teori dan hasil-hasil penelitian tentang faktor-faktor penentu struktur modal perusahaan memberikan penjelasan dan bukti-bukti yang berbeda. Perusahaan-perusahaan kriteria syariah di Bursa Efek Indonesia (BEI) tidak diperkenankan memiliki rasio total utang berbasis bunga terhadap total aset lebih dari 45%, yang diprediksi akan berdampak terhadap determinan struktur modal mereka. Penelitian ini dilakukan pada perusahaan-perusahaan manufaktur kriteria syariah di BEI tahun 2011-2017. Hasil analisis menunjukkan bahwa hanya profitabilitas yang memiliki pengaruh dengan arah yang sama yaitu negatif terhadap kedua ukuran struktur modal, yaitu book leverage dan market leverage. Growth opportunity dan ukuran perusahaan memiliki pengaruh yang berbeda terhadap kedua ukuran struktur modal, yaitu berpengaruh positif terhadap book leverage dan negatif terhadap market leverage. Tangibility, risiko bisnis, dan inflasi hanya berpengaruh terhadap market leverage. Tangibility dan inflasi berpengaruh positif terhadap market leverage, sedangkan risiko bisnis berpengaruh negatif. Penelitian ini tidak menemukan bukti bahwa gross domestic product (GDP) berpengaruh terhadap leverage, baik terhadap book leverage maupun market leverage.

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1. Introduction

The funding sources preference that will form a capital structure is an important decision in supporting firm operations (Ahmadpour, Samimi, & Golmohammadi, 2012). The right investment decision will produce a higher return if financed with an optimal capital structure; it is because the firm will reach the lowest average cost of capital (Karadeniz et al., 2009). The last few decades capital structure has become the most interesting study in the financial literature (Chakraborty, 2010), and the study has led to the development of two grand theories of firm capital structure, namely trade-off theory and pecking-order theory (Ghazouani, 2013).

Trade-off theory explains that a firm can achieve an optimal capital structure by balancing the benefits of tax savings and the cost of financial distress over debt (Tomschik, 2015) so that capital structure will positively relate to profitability. Pecking-order theory explains that the asymmetric information between managers and investors, resulting in firm managers prefer funding from sources with the lowest risk sequence (Chakraborty, 2010). First, the firm chooses internal financing through retained earnings; second is debt, and equity followed as the last option (Myers & Majluf, 1984). The pecking-order theory shows that the capital structure has a negative influence on firm profitability (Çekrezi, 2013).

Trade-off theory and pecking-order theory accuracy testing explaining the background of the firm establishing its capital structure is still ongoing, however, research results remain inconsistent (Acaravci, 2015). A few decades ago, Myers & Majluf (1984) described this phenomenon as a puzzle of

capital structure that seemed difficult to solve. Yildirim, Masih, & Bacha (2018) summarizes several determinants as a firm background in determining its capital structure that is associated with the prediction of Trade-off Theory (TOT) and Pecking Order Theory (POT), in Table 1.

In addition to GDP Growth, the macroeconomic condition that is often associated with the firm capital structure (leverage) is inflation. Taggart (1985) explains when high inflation the tax features in the US can increase the real value of firm tax reduction on debt. Therefore, the Trade-off Theory predicts a positive relationship between capital structure and predicted inflation. Conversely, it is difficult to see why inflation is important for the firm to leverage decisions in the pecking order model (Frank & Goyal, 2009).

Regarding capital structure decisions and determinants, Sharia criteria firms on the Indonesia Stock Exchange have some differences or limitations compared to non-Sharia firms. Decree of Bapepam LK Number KEP-208/BL/2012 statute that: first, the business activities of firms that are in Sharia criteria must not violate Islamic Sharia; Second, meet the following financial ratios: (a) total interest-based debt compared to total assets of not more than 45%; (b) total interest income and other non-halal income compared to total business revenue and other income not more than 10%. The provision predicted to have an impact on the capital structure decisions of Sharia criteria firms and their determinants. Thus, it is important and interesting to conduct research on the determinants of capital structure in Sharia criteria firms on the Indonesia Stock Exchange.

Table 1. Determinants of capital structure and TOT-POT predictions

Determinants of Capital Structure	Predictions		Determinants of Capital Structure	Predictions	
	TOT	POT		TOT	POT
Profitability	+	-	Tangibility	+	-
Growth opportunity	-	+	Business risk	-	+
Firm size	+	-	GDP growth	+	-

This research was conducted to examine the determinants of the capital structure of manufacturing firms that are included in Sharia criteria on the Indonesia Stock Exchange (IDX). Meanwhile, the reason for choosing the manufacturing sector is to eliminate industrial bias, and the manufacturing sector is the industry with the most number of firms on the IDX. This research uses data from 2011 to 2017, it is because the list of ISSI (Indonesian Sharia Stock Index) began launching in 2011, and at the time of this research, the most recent data that can be collected is 2017.

2. Hypotheses Development

Capital Market and Financial Institution Supervisory Agency Decree Number: Kep-208/BI/2012 Concerning Criteria and Issuance of Sharia Securities List, as stated, states that firms whose shares can be included in the ISSI category must fulfill two things, namely: First, the firm activities do not violate Islamic law, that is, it does not carry out business activities as follows: (1) gambling and games classified as gambling, (2) trade that is prohibited by Islamic law, which includes, among others, trade that is not accompanied by the delivery of goods or services and trade with fake offers/ requests, (3) *ribawi* financial services, including interest-based banks and interest-based finance firms, (4) buying and selling risks that contain elements of uncertainty (*gharar*) and/or gambling (*maisir*) including conventional insurance, (5) producing, distributing, trading, and/or providing, among others: illicit goods or services (*illicit li-dhatihi*), illicit goods or services not because of the substances (*haram li-ghairihi*) stipulated by DSN MUI and goods or services that damage morale and/or are of a nature *mudharat*, and (6) conducting transactions containing elements of bribery (*riswah*); Second, meet the financial ratios as follows: (a) total interest-based debt compared to total assets is no more than 45% (forty-five percent), and (b) total interest income and other non-halal income compared to total operating income (revenue) and other income not more than 10 percent.

Thus, firms whose shares are included in the ISSI category have limitations, both in terms of funding and in terms of revenue, which in turn will have an impact on capital structure decisions and firm performance. The determinants of capital structure used in this study are the factors that are reliable and that have predictions in testing the accuracy of the Trade-Off Theory and the Pecking Order Theory. The determinants of capital structure follow Yildirim, Masih, & Bacha (2018) and Kh'emiri & Noubbigh (2018) for inflation.

The Trade-off theory states that more profitable firms should use more debt. This is because in addition to functioning to discipline managers when free cash flows increase (Jensen, 1986), it also has the opportunity to benefit from tax savings. This argument related with the findings of Piaw & Jais (2014) and Yildirim, Masih, & Bacha (2018). Pecking Order Theory explains that profitable firms will retain more income as a preferred source of funding, so that the leverage's amount needed by the firm is reduced (Myers, 1984). Academic studies have found a consistent negative relationship between profitability and leverage, as predicted by the Pecking Order Theory.

H₁: profitability has a negative effect on leverage

Goyal, Lehn, & Racic (2002) prove that when a firm has growth opportunities, the firm's defense will decrease if the growth opportunity financed with debt. Based on these considerations, the Trade-off Theory suggests a negative relationship between growth opportunities and leverage. This negative relationship has also reported and confirmed for example by Fama & French (2002), Barclay, Smith, & Morellec (2006), and Dang & Garrett (2015).

Pecking Order Theory predicts a positive relationship between growth opportunities and leverage. The reason is that the information asymmetry will be higher, because shareholders are not willing to disclose much information about their investment opportunities. Positive relationships have noted in

academic studies such as, Guney, Li, & Fairchild (2011), Dang, Kim, & Shin (2014) and Andres et al. (2014). However, academic studies have found a consistent negative relationship between growth opportunities and leverage, as predicted by the Trade-off Theory.

H₂: growth opportunities negatively affect leverage

The Trade-off Theory predicts a positive relationship between firm size and leverage. It is said that the larger the firm size, the less it will face the risk of bankruptcy. Therefore, these firms are too big to fail. This prediction is in line with the findings of Ozkan (2001), Deesomsak, Paudyal, & Pescetto (2004), Bas, Muradoglu, & Phylaktis (2009), Guney, Li, & Fairchild (2011), and Dang & Garrett (2015).

Pecking Order Theory explains that large firms monitored more through the capital market so that asymmetric information is down. Larger firms will be able to issue equity at lower costs, and have the opportunity to maintain profits (Frank & Goyal, 2009). The study of Chen (2004), Chakraborty (2010), and Haron & Ibrahim (2012) found a negative relationship between firm size and leverage, according to arguments from the Pecking Order Theory. However, academic studies have found a consistent positive relationship between firm size and leverage, as predicted by the Trade-off Theory.

H₃: firm size has a positive effect on leverage

Tangibility is a direct measure of security that a firm can offer investors. The Trade-off Theory estimates that firm leverage increases with great tangibility. Therefore, agency costs are lower between shareholders and debt holders, so firms should use more debt relative to the amount of tangible assets they own. The results of Frank & Goyal's research (2009), Fan, Wei, & Xu (2011), Andres et al. (2014), and Dang & Garrett (2015) have found a positive relationship between firm tangibility and leverage.

The Pecking Order Theory argues in the opposite direction and shows that tangibility will produce less information asymmetry between investors and shareholders. Therefore, the cost of issuing equity reduced, which in turn will result in lower debt levels (Frank & Goyal, 2009). Negative relationships reported by previous studies such as Haron & Ibrahim (2011), Sorokina (2014), and Piaw & Jais (2014). However, academic studies have found a consistent positive relationship between tangibility and leverage, as predicted by the Trade-off Theory.

H₄: tangibility has a positive effect on leverage

Rising revenue volatility will increase the chance of default on the firm's obligations to debt. So, according to the Trade-off Theory, firms need to reduce their debt levels to minimize the risk of bankruptcy. Frank & Goyal (2009) stated that volatility in income could limit opportunities to take advantage of tax protection, which leads to lower debt levels. This negative relationship between business risk and leverage is reported by Delcours (2007), De Jong, Kabir, & Nguyen (2008), and Deesomsak, Paudyal, & Pescetto (2009).

Pecking Order Theory predicts that higher risk leads to higher leverage, the reason being that volatility in earnings will cause investors to require higher returns, so it is more expensive to issue equity (Rajan & Zingales, 1995). This argument is supported by Deesomsak, Paudyal, & Pescetto (2004), Ariff, Hassan, & Shamsher (2008), and Sorokina (2014). Academic studies have found a dominant negative relationship between business risk and leverage, as predicted by the Trade-off Theory.

H₅: business risk has a negative effect on and leverage

De Jong, Kabir, & Nguyen (2008) found that the higher the economic growth, the higher the firms willingness to use debt to finance their new investments. However, the Pecking Order Theory explains that GDP growth is associated with higher profits

for firms, so it can use more internal capital than debt financing.

Academic studies found mixed results from the relationship between economic growth and leverage. And, the results show a dominant negative relationship as predicted by the Pecking Order Theory. While Bas, Muradoglu, & Phylaktis (2009), Hanousek & Shamshur (2011), and Çekrezi (2013) found a positive relationship. Other studies such as Ariff, Hassan, & Shamsher (2008), Haron & Ibrahim (2012), and Piaw & Jais (2014) found a negative relationship between economic growth and leverage.

H₆: GDP growth has a negative effect on and leverage

Investors demand more return on their investment every time when inflation rises (Brigham & Ehrhardt, 2005). So the low leverage use is suggested trade-off theory. Oztekin & Flannery (2012) and Oztekin (2013) report that inflation negatively related to leverage. Based on trade-off theory, posi-

tive relationships can also be established (Frank & Goyal, 2009; Taggart, 1985), which argues if inflation is high, the real value of tax reductions will be high.

Academic studies have found various results from the relationship between inflation and leverage. The dominant study results show a negative relationship that supports the prediction of the Pecking Order Theory. Ariff, Hassan, & Shamsher (2008), Haron & Ibrahim, 2012), and Piaw & Jais (2014) found a negative relationship between economic growth and leverage. However, the results of the Hanousek & Shamshur study (2011), Çekrezi (2013), Memon, Rus, & Ghazali (2015), Kh'emiri & Noubbigh (2018) found a positive relationship.

H₇: inflation growth has a positive effect on and leverage

3. Method, Data, and Analysis

This study used secondary data published by the Indonesia Stock Exchange, and the population

Table 2: Dependen and independen variables

Variables	Definition	Measure	References
Dependent			
BLEV	Book leverage	Book Debt/ Total Assets	Yildirim, Masih, & Bacha (2018); Li & Islam (2019).
MLEV	Market leverage	Book Debt / (Total Assets - Book Equity + Market Equity)	Yildirim, Masih, & Bacha (2018); Li & Islam (2019).
Independent			
PROF	Profitability	Earnings After Tax/ Total Assets	Vo (2017); Yildirim, Masih, & Bacha (2018); Moradi & Paulet (2019).
GRWTH	Growth opportunity	Market Value Assets / Book Value Assets	Vo (2017); Moradi & Paulet (2019); Yildirim, Masih, & Bacha (2018).
SIZE	Firm size	Log Total Sales	Moradi & Paulet (2019); Vo (2017); Yildirim, Masih, & Bacha (2018).
TANG	Tangibility	Fixed Assets / Total Assets	Vo (2017); Moradi & Paulet (2019); Yildirim, Masih, & Bacha (2018).
RISK	Business risk	Standard Deviation of Stock Returns.	Chang <i>et al.</i> (2014); Frank & Goyal (2009); Qian <i>et al.</i> (2009).
GDP	GDP growth	Gross Domestic Product Growth (annual %)	Yildirim, Masih, & Bacha (2018); Kh'emiri & Noubbigh (2018); Chang <i>et al.</i> (2014).
INF	Inflation growth	Inflation growth (annual %)	Chang <i>et al.</i> (2014); Memon, Rus, & Ghazali (2015); Kh'emiri & Noubbigh (2018).

all manufacturing firms' Sharia criteria. The sampling method used was purposive sampling with the criteria that the firms: (1) consecutively entered Sharia criteria for 2011-2017, and (2) published annual report 2011-2017.

Capital structure (leverage) as the dependent variable is proxy for book leverage (BLEV) and market leverage (MLEV). The independent variable consists of: profitability (PROF); growth opportunities (GRWH); firm size (SIZE); tangibility (TANG); business risk (RISK); gross domestic product growth (GDP); and inflation growth (INF). Table 2 presents the variable names, definitions, how to measure, and their references.

This research uses panel data. One year time lag (t-1) is applied to all independent variables, as used by Yildirim, Masih, & Bacha (2018). The effect of the independent variables on the two dependent variables is formulated in the following regression equation model:

$$BLEV_{it} = \epsilon_0 + \epsilon_1 PROF_{i,t-1} + \epsilon_2 GRWH_{i,t-1} + \epsilon_3 SIZE_{i,t-1} + \epsilon_4 TANG_{i,t-1} + \epsilon_5 RISK_{i,t-1} + \epsilon_6 GDP_{i,t-1} + \epsilon_7 INF_{i,t-1} + u_{i,t-1} \quad (1)$$

$$MLEV_{it} = \gamma_0 + \gamma_1 PROF_{i,t-1} + \gamma_2 GRWH_{i,t-1} + \gamma_3 SIZE_{i,t-1} + \gamma_4 TANG_{i,t-1} + \gamma_5 RISK_{i,t-1} + \gamma_6 GDP_{i,t-1} + \gamma_7 INF_{i,t-1} + u_{i,t-1} \quad (2)$$

Where: $BLEV_{it}$ = Book leverage for firm i at time t; $MLEV_{it}$ = Market leverage for firm i at time t; $PROF_{i,t-1}$ = Profitability for firm i at time t-1; $GRWH_{i,t-1}$ = Growth opportunity for firm i at time t-1; $SIZE_{i,t-1}$ = Size of firm i at time t-1; $TANG_{i,t-1}$ = Tangibility of firm i at time t-1; $GDP_{i,t-1}$ = GDP Growth at time t-1; $INF_{i,t-1}$ = Inflation growth at time t-1; γ_0 and ϵ_0 = Common y-intercept; γ_1 and ϵ_1 - γ_7 and ϵ_7 = Coefficients of the concerned explanatory variables; $u_{i,t-1}$ = Stochastic error term of firm i at time t-1.

4. Results

This study uses a balance panel data, with an observation period of seven years, from 2011 to

2017. The results of data collection obtained as many as 61 firms that meet the sample criteria. The data analysis tool uses E-views 9.0 software. The number of firms analyzed each year, more than the period of the year analyzed, recommends that the random effect model be better to use. In addition, the Hausman Test results show the chi-sq value statistics = 0,000, chi-sq. d.f. = 7.00, and probability = 1.00. Therefore, the random effect model is used.

Next, descriptive statistics are presented in Table 3 and a summary of the results of data analysis is shown in Table 4.

The capital structure (leverage) of Sharia criteria manufacturing firms on the Indonesia Stock Exchange, both as measured by BLEV and MLEV, has an average of below 45 percent, namely 0.396 and 0.369. This shows that these firms comply with Bapepam LK Decree No. KEP-208/BL/2012 generally. Table 3 shows that the maximum value of BLEV reached 1,221 and MLEV of 0.950, but the excess leverage is more above 45 percent is not debt from sources that violate the provisions.

5. Discussion

Profitability and leverage

Profitability shows a negative effect on leverage, both for book leverage and market leverage. This negative relationship is consistent with Pecking Order Theory the predictions which states that higher profitability will enable the firm to retain more revenue as a preferred source of funding. Therefore, the debt amount needed is reduced (Myers, 1984). In studies of firms that comply with Sharia, similar results are reported by Haron & Ibrahim (2012) and Thabet & Hanefah (2014) which prove a negative relationship between profitability and leverage in Malaysia. This finding is in accordance with the study results of Yildirim, Masih, & Bacha (2018) of firms that comply with Sharia. Thus hypothesis 1, profitability has a negative effect on

leverage (both book leverage and market leverage) accepted.

Growth opportunities and leverage

Growth opportunity has a positive effect on book leverage and negatively on market leverage. The positive influence of growth opportunity on book leverage is in accordance with the Pecking Order Theory, with the argument that investment opportunities will increase financial deficits and firms prefer debt financing to overcome those (Gaud et al., 2005). The negative influence of growth opportunity on market leverage is in accordance with the Trade-off Theory. The cost of financial distress in firms with high growth is also relatively high, which leads to an increase in the cost of debt agencies, the consequently debt financing is decrease (Ariff, Hassan, & Shamsheer, 2008).

Previous studies on Sharia firm groups conducted by Haron & Ibrahim (2012) in Malaysia proved that growth opportunity did not affect book leverage and market leverage. Yildirim, Masih, & Bacha (2018) proves that growth opportunity has a negative effect on book leverage and market leverage in Sharia compliant firms, and positive on book leverage in firms that do not comply with Sharia. Thus hypothesis 2, growth opportunity has a positive effect on leverage, accepted for the proxy of book leverage variable.

Firm size and leverage

The analysis shows that firm size has a positive effect on book leverage, but has no effect on market leverage. The positive effect of firm size on leverage is in line with the Trade-off Theory idea, which explains that the greater the firm the less risk

Table 3. Descriptive statistics

Variables	BLEV	MLEV	PROF	GRWH	SIZE	TANG	RISK	GDP	INF
N Valid	427	427	427	427	427	427	427	427	427
Mean	0.396	0.369	0.081	1.439	6.217	0.330	0.136	5.546	5.429
Median	0.375	0.303	0.066	0.639	6.159	0.308	0.099	5.600	5.100
Std. Dev.	0.186	0.246	.0948	2.522	0.721	0.175	0.166	0.567	2.040
Minimum	0.010	-0.070	-0.160	0.030	4.890	0.000	0.000	4.800	3.000
Maximum	1.220	0.950	0.720	26.500	8.420	0.890	2.650	6.220	8.400

Table 4. Summary of analysis results

Determinants	Book Leverage (BLEV)			Market Leverage (MLEV)		
	Coeff.	t-Stat.	Prob.	Coeff.	t-Stat.	Prob.
Profitability t_{-1}	-0.3690	-4.1507	0.0000***	-0.2749	-2.3331	0.0201**
Growth opportunity t_{-1}	0.0116	2.9149	0.0037**	-0.0311	-5.9835	0.0000***
Firm size t_{-1}	0.0544	2.4373	0.0152**	-0.0316	-1.1784	0.2393
Tangibility t_{-1}	-0.0071	-0.1451	0.8847	0.1462	2.2757	0.0234**
Business risk t_{-1}	-0.0307	-1.0859	0.2782	-0.0739	-1.9520	0.0516**
GDP growth t_{-1}	0.0111	1.2446	0.2140	-0.0176	-1.4918	0.1365
INF growth t_{-1}	0.0009	0.4442	0.6571	0.0071	2.5014	0.0128***
R-squared		0.062740			0.164537	
Adjusted R-squared		0.047082			0.150580	
F-statistic		4.006821			11.78835	
Prob(F-statistic)		0.000293***			0.000000***	

***significance at level 1%, ** significance at level 5%.

of bankruptcy and consequently the high leverage tends to be owned by the firm. Firm size has no effect on market leverage, this finding is in line with Frank & Goyal (2009) and Sorokina (2014).

The study of shariah criteria firms conducted by Haron & Ibrahim (2012) in Malaysia, proves that firm size has a negative effect on book leverage and market leverage, and explains that large firms generate profits and have higher retained earnings to support their investment. However, Yildirim, Masih, & Bacha (2018) prove that firm size has a positive effect on book leverage and market leverage. Thus, hypothesis 3, firm size has a positive effect on leverage, accepted for the proxy of book leverage variable.

Tangibility and leverage

The analysis shows that tangibility has a positive effect on market leverage, but has no effect on book leverage. This finding is in line with the Trade-off Theory, which explains that the positive relationship between tangibility and leverage, one of them is, shows the role of tangible assets in reducing agency costs for outside investors, which in turn will increase firm leverage (De Jong, Kabir, & Nguyen (2008), Kayo & Kimura (2011), and Fan, Wei, & Xu (2011).

Another result that is consistent with this finding is the study of Yildirim, Masih, & Bacha (2018) on firms that comply with Sharia, and prove tangibility has a positive effect on market leverage, but does not affect book leverage. Haron & Ibrahim (2012) also found a positive relationship between tangibility and market leverage, but not for book leverage. Thus hypothesis 4, tangibility has a positive effect on leverage, accepted for the proxy of market leverage variable.

Business risk and leverage

The analysis shows that business risk has a negative effect on market leverage, but does not affect book leverage. The positive relationship be-

tween business risk and market leverage is in line with Trade-off Theory predictions, which explains that rising earnings volatility will increase the chance of default on firm debt. Volatility in income can limit opportunities to take advantage of tax protection, which leads to lower debt levels (Frank & Goyal (2009). Negative relationship between business risk and leverage is reported by Delcours (2007), De Jong, Kabir, & Nguyen (2008), and Deesomsak, Paudyal, & Pescetto (2009).

For firms that comply with Sharia, studies of the relationship between business risk and leverage show conflicting results. Thabet & Hanefah (2014) prove a negative relationship, but Haron & Ibrahim (2012) report a positive relationship between business risk and leverage. Research by Yildirim, Masih, & Bacha (2018) proves that business risk does not affect leverage on firms that comply with Sharia, but negatively affects market leverage in firms that do not comply with Sharia. Thus hypothesis 5, business risk negatively influences leverage, accepted for the proxy of market leverage variable.

GDP growth and leverage

The analysis shows that GDP has no effect on leverage (book leverage and market leverage), this finding is in accordance with Yildirim, Masih, & Bacha (2018) of firms that comply with shariah. This finding does not support the Pecking Order Theory which explains that an increase in GDP is associated with higher profits, so firms can use more internal capital than debt. This finding also does not support the Trade-off Theory which explains that the higher GDP growth, the higher the willingness of firms to use debt to finance their new investment. Thus hypothesis 6, GDP growth has a negative effect on leverage, rejected.

Inflation growth and leverage

This research proves that the increase in inflation has a positive effect on leverage as measured

by market leverage, but does not affect book leverage. This finding supports the Trade-off Theory prediction which explains that if inflation is high, the real value of tax reduction will also be high, resulting in a positive relationship between inflation and leverage (Frank & Goyal, 2009; Taggart, 1985).

This finding is in line with the results of Hanousek & Shamshur (2011), Çekrezi (2013), Memon, Rus, & Ghazali (2015), Kh'emiri & Noubbigh (2018) which proves that inflation growth is positively related to leverage. Thus hypothesis 7, inflation growth has a positive effect on and leverage, is accepted for the proxy of market leverage variables.

6. Conclusion, Limitations, and Suggestions

Conclusion

The results of the analysis show that only profitability has the same direction which is negative towards both the size of the capital structure, book leverage and market leverage. Growth opportunity and firms' size have different effects on the two capital structure measures, which are positive for book leverage and negative for market leverage. Tangibility, business risk, and inflation only affect market leverage, tangibility and inflation have a positive effect, while business risk has a negative effect. This study does not find evidence that GDP growth affects the two measures of capital structure of the manufacturing firms shariah criteria. This

result cannot answer explicitly, whether the capital structure policy of Sharia criteria manufacturing firms on the IDX, is in line with predictions of the Trade-off Theory or the Pecking Order Theory. However, it can be identified that when using the book leverage, it tends to follow the Pecking Order Theory. Conversely, when using the market leverage, it tends to follow the Trade-off Theory predictions. These results are in accordance with the findings of Yildirim, Masih, & Bacha (2018) of firms that comply with Sharia in the United States, United Kingdom, Canada, and other countries.

Limitations and suggestions

The results of this study indicate that firms with higher profitability have lower leverage. However, it is recommended to manufacturing firms Sharia criteria to continue to have an optimal capital structure targeted. It is because in addition to functioning to discipline managers when free cash flows increase, debt financing also has the opportunity to benefit from tax savings.

Future studies are recommended to: (a) compare the determinants of capital structure between firms that include Sharia and non- Sharia criteria; (b) examine the impact of capital structure decisions of the two groups of firms (Sharia and non- Sharia) on the achievement of their market performance; (c) include other industrial sectors, in addition to the manufacturing industry sector.

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