Artikel 3

by Arif Yulianto

Do Industry and Religion Affect Capital Structure?

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Abstract

Implementation of the Bank based system and pecking order theory will encourage the preference for the use of debt that is greater than equity. The research data as much as 759 units of observation in the manufacturing industry sector which consists of basic industry and chemicals, miscellaneous industry and consumer goods industry during the period, 2014 - 2018

The results showed that debt preference is insignificantly influenced by the manufacturing industry sector, however rather is influenced by financial and risk factors. In addition, the financial market tends to be volatile in the long run, hence that there are companies that do not prioritize debt in financing. Companies included in Jakarta Islamic Index (JII) as a religion proxy are unable to change the company culture, including managers in capital structure decisions

I. Introduction

Schmukler and Vesperoni (2001)explain that financing companies in developing countries are basedon bank-based and market-based economies. Warjiyo (2014) mentions Indonesia as bank-based economies therefore that the central bank is important to carry out a policy of interest rates complemented by flexible exchange rates and macroprudential in achieving monetary and financial stability. However, the support of the bank-based system does not only depend on the central bank however the company's internal factors in determining capital structure. As developed countries have better economic, legal, and financial systems, they provide companies operating within a better, easier and cheaper access to external financial sources (Sakr and Bedeir, 2018)

Previous research on factors that influence capital structure decisions can be reviewed in pecking order theory and trade-offs (Frank and Goyal, 2003); agency cost (Jensen, 1986); Market timing (Baker and Wurgler, 2002); Asymmetry of information (Myers dan Majluf, 1984); Free Cash Flow (Jensen and Meckling, 1976)

In addition, research on capital structure is carried out to find out the factors that affect capital structure within countries and a country (Li and Islam, 2015). Research conducted in a country generally assumes that companies have the same specific factors in common. Whereas each industry has specific different factors such as the business environment, industry regulations, and competition that influence capital structure decisions (Mackay and Phillips, 2005).

With the support of bank-based economies, the company will prioritize debt funding more than equity. This is in line with the pecking order theory about the funding hierarchy (Frank and Goyal, 2003) which is determined by industry characteristics. Research in Indonesia by Tandya (2015) explains the validity of the pecking order theory in explaining capital structure decisions. Previous research by Antoniou et al., 2008)

Meanwhile, La Porta et al (1999) documented differences in financing decisions for firms in countries with a majority of Catholics and Protestants to answer the puzzle. Countries with a majority of Catholics compared to Protestants tend to have more robust debt markets. Furthermore, countries with a majority of Catholics tend to have weak protection against shareholders, less developed capital markets, lower economic development, and civil legal systems. Previous research conducted in developing countries with a bank-based system showed different results, Rahim et al (2019) research in Indonesia, and found that Christian CEOs had a significant impact on capital structure, namely the use of higher debt compared to other religious CEOs. In contrast, Muslim CEOs have an insignificant impact on capital structure. They arafound large Shariah-compliant firms in Malaysia tended to issue debt to support investment activities

Previous research was inconsistency by Gunn and Shackman (2013) regarding financing decisions in 658 firms from 16 Muslim and non-Muslim countries for 7 years. Firms in Muslim countries appear to have overall flexibility in leverage ratios comparable to non-Muslim countries or there is no difference in the capital structure.

The inconsistency of the impact of religion on this capital structure has implications in Indonesia with a Muslim majority population of 87.18% (2018). In Islamic philosophy, the fulfillment of funding is preferable with equity which is profit-sharing rather than debt. Supporting the negative impact of debt use such as Sipon et al (2014) found a significant relationship between debt and the level of religious subjects, namely a positive relationship between the level of debt and financial pressures. Othman and Sipon (2014) found that in a Malaysian country with a Muslim majority, debt is allowed but to protect the relationship between Muslims because debt can be a disease of society

The Indonesian capital market developed a stock index that is categorized as Islamic Sharia, called the Jakarta Islamic Index (JII). Firms included in the JII list are expected to be able to embrace Islamic culture in every business decision making (Piliyanti, 2010l Baxamusa et al., 2014) including capital structure. So that the decision of the firm's capital structure in JII can minimize the use of debt for investment because of the impact of financial pressures and potential conflicts. This research was conducted in manufacturing firms listed on the Indonesia Stock Exchange (IDX) in the manufacturing sector so that capital structure is homogeneous (Das and Roy,2000). To have a deeper understanding, the impact of religion as a culture in capital structure decisions needs to be done in Indonesia with a Muslim majority

In addition to being determined by external factors such as the banking system in the country, capital structure decisions are also determined by company culture, such as religion. La Porta et al (1999) explain differences in corporate capital structure decisions in states that are predominantly Catholic and Protestant. Supporting research such as Baxamusa and Jalal (2013) in the US and Iannaccone (1998) in OECD countries. OECD countries can be divided into four groups, depending on the religious background: Catholic / Orthodox, Protestant, Muslim and Eastern Religions (including, Buddhist, Hindus, and Taoists) and have different capital structures.

As the result, we believe that more research is needed to gain a better understanding of the impact of industry-specific factors and religion on the choice of capital structure.

II. LITERATURE REVIEW

Myers and Majluf (1984) explain pecking order theory based on information asymmetry between agents and principals. Agents as insiders can have information that is not owned by outsiders such as shareholders or debtholders. If the agent decides the addition of debt, it will have an impact on the

debtholders and shareholders conflict. Conflicts will occur when debtholders want investment in projects that can reduce the risk of non-payment of credit, however shareholders instead want projects that can increase the value of equity. This situation creates problems in the credit market with asymmetric information, as a result of conflicts of interest between shareholders and bondholders.

In external funding, the use of debt will be pre-referenced compared to equity according to company characteristics. Beattie (2004) explainsusing debt finance depends on the relationship between profit opportunities and company growth with a long-term dividend payout ratio. The characteristics of each industry sector are different, and Allen (1991) will conclude if they must use external financing, they will issue the safest preference: debt, followed by hybrids such as convertibles, and finally equity as a last resort.

Larry and Islam (2015) conducted a study of 20 industrial sectors recorded from 2000 to 2012 in Australia finding industry-specific results with a large GDP impacting capital structure decisions. Bahsh et al (2018) conducted a study of 1.239 units of observation in 2003 - 2016 found that there were differences in the industry and service sectors in capital structure decisions due to different levels of company growth.

Different results from Sakr and Bedeir (2018) conducted a study of 58 listed companies in the period 2003 - 2018 in Egypt found the results did not support pecking orders however supportedtrade-offs. Then the first hypothesis is that there are differences in the industrial sector in capital structure decisions, with framework theory in figure 1

The relationship between debt financing and Catholicism has been observed in La Porta et al. (1999) and several other later studies. Researchers find that Catholic countries tend to have a more robust debt market when compared to Protestant countries and they utilize debt more than equity when financing their business activities. However, the presence of a number of confounding factors can easily cast doubt on these findings. For example, these Catholic countries also tend to have weaker shareholder protections, less developed capital markets, lower economic development, and a Civil legal system

Gunn and Shackman (2013) conducted a study of 658 companies in 16 countries for 7 years and found insignificant differences in Muslim and non-Muslim countries in the debt ratio. However, there are significant differences, namely Muslim countries prioritize the use of short-term debt.

Rahim et al (2018) conducted a study of 192 Sharia companies in Malaysia from 1999 and 2017 and found the results of the need for an optimal Islamic-based capital structure.

Sipon et al (2013) conducted a study with primary data on 180 participants and found a difference in financial debt based on the level of religiosity.

Baxamusa and Jalal (2013) conducted a study in 20 counties (counties) in the US found that there were significant differences in the districts where companies were predominantly Catholic and Protestant in the use of leverage. Companies can sustainably maintain the level of leverage different if their culture is less dependent on debt. An established cultural level, debt financing needs are not a priority however rather the stability of leverage. Therefor the second hypothesis is that there are differences in capital structure based on religion, with framework theory in figure 1
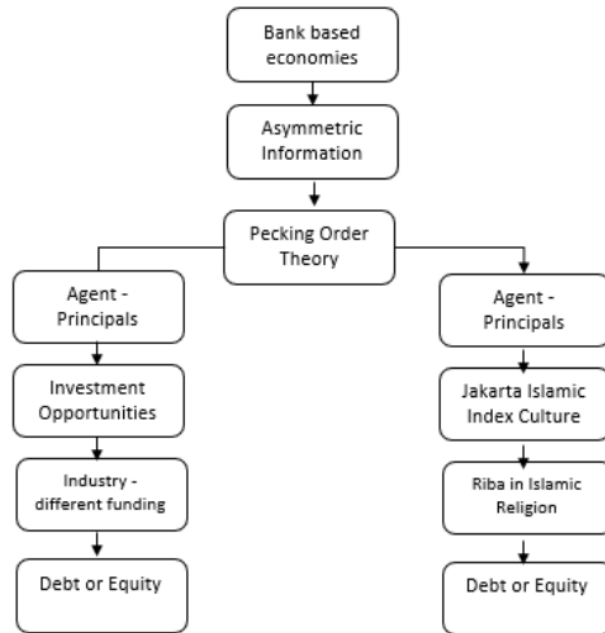
Fig 1. Framework Theory

III. RESEARCH METHOD

The research data is 759 observations in the manufacturing industry, which consists of sectors of Basic Industry and Chemicals (BIC) of 43.87%, Miscellaneous Industry (MI) amounted to 28.19%, and Consumer GoodsIndustry (CGI) 27.94%. Data source from IDX statistics JII (Jakarta Islamic Index) period 2014-2018

The study uses a company registered with the Jakarta Islamic Index (JII) as an independent variable. Companies listed in JII will try to accommodate the Islamic culture within the company, thereby affecting every company's decision, including debt decisions. Independent variables are measured simply dummy variable with a value of 1 included in JII and 0 is the other.Dependent variables use total debt/total equity that compares the use of debt and equity (Baxamusa and Jalal, 2013)

The data in this study use Analysis of Varians (Anova) to testing differences in capital structure based on manufacturing and religious industries. Data prerequisite testing shows that the data does not meet parametric assumptions, hence a non-parametric test of the Kruskal-Wallis test is carried out followed by a Nemenyi test (Table 1 for first hypothesis and 2 for second hypohesis)

Table 1. data Assumption for Paramaterik within industry

	BIC	MI	CGI	COMBINED
d'Agostino-Pearson				
DA-stat	560.93	467,63	311.54	1936,75
p-value	0	0	0	0
alpha	0.05	0.05	0.05	0.05
normal	no	no	no	no

Table 2. Data Assumption forParametrik between Religious and Capital Structure

	Others	Islamic Culture
d'Agostino-Pearson		

DA-stat	1833,766	5.846814
p-value	0	0.05375
alpha	0.05	0.05
normal	no	yes

IV. FUNDING AND RESULTS

The results contained differences in the median DER in the four categories. The median DER in the BIC sector is larger while the MI and CGI sectors are smaller than the total industry of 0.9. The MI sector has a greater DER variation compared to other sectors or as a whole (Table 3)

Table 3. Statistic Descriptive : DER within Industry

	BASIC INDUSTRY AND CHEMICALS	MISCELLANEOUS INDUSTRY	CONSUMER GOODS INDUSTRY	COMBINED
The mean	2.02	6.95	0.72	3.05
Standard Error	0.33	6.40	0.61	1.82
Median	1.00	0.98	0.66	0.90
Mode	1.36	1.02	0.43	0.35
Standard Deviation	6.08	93.69	8.92	50.11
Sample Variance	36.91	8777.21	79.62	2511.03
Kurtosis	110.69	202.17	119.13	695.52
Skewness	9.47	13.99	-6.09	25.75
Range	88.44	1489.53	177.83	1489.53
Maximum	83.08	1352.00	70.83	1352.00
Minimum	-5.36	-137.53	-107.00	-137.53
Sum	673.31	1487.74	153.11	2314.16
Count	333	214	212	759

Inferential testing shows there are differences in DER between BIC, MI, CGI, and combined. Although in developing countries capital structure decisions are more dominated by the ease of accessing debt than issuing equity. However the results showed a smaller debt ratio than equity (Table 4)

Table 4. Kruskal-Walls DER within industry

	BASIC INDUSTRY AND CHEMICALS	MISCELLANEOU S INDUSTRY	CONSUMER GOODS INDUSTRY	COMBINED	
the median rank	1.00	0.98	0.66	0.90	
sum	266667.50	169515.00	140278.00	576460.50	
count	333.00	214.00	212.00	759.00	1518.00
r^2/n	213548214.8 8	134277267.41	92820364.5 5	437821749.7 5	878467596.5 9
D-stat					14.70
H-ties					14.70
df					3.00
p-value					0.00
alpha					0.05
sig					yes

Next to the continuation of the KW test Nemenyi test was carried out to find out more in detail about the differences in the DER of each sector in manufacturing. The test results show that there are significant differences in the sectors of (a) BIC and CGI (b) MI and CGI (c) CGI and combined. The CGI sector is different from other sectors in manufacturing, this shows the tendency of the CGI sector if it meets funding to issue debt (table 5)

Table 5. Nemenyi Test within industry

NEMENYI TEST			alpha	0.05	19.21
group	R sum	size	R mean	q-crit	
BASIC INDUSTRY AND CHEMICALS	266667.50	333.00	800.80		
MISCELLANEOUS INDUSTRY	169515.00	214.00	792.13		
CONSUMER GOODS INDUSTRY	140278.00	212.00	661.69		
COMBINED	576460.50	759.00	759.50		
		1518		3,646	

Q TEST						
group 1	group 2	R mean	std err	q-stat	p-value	R-crit
BASIC INDUSTRY AND CHEMICALS	MISCELLANEOUS INDUSTRY	8.68	27.16	0.32	1.00	99.01
BASIC INDUSTRY AND CHEMICALS	CONSUMER GOODS INDUSTRY	139.11	27.23	5.11	0.00	99.30
BASIC INDUSTRY AND CHEMICALS	COMBINED	41.30	20.37	2.03	0.48	74.28
MISCELLANEOUS INDUSTRY	CONSUMER GOODS INDUSTRY	130.44	30.04	4.34	0.01	109.51
MISCELLANEOUS INDUSTRY	COMBINED	32.63	23.99	1.36	0.77	87.47
CONSUMER GOODS INDUSTRY	COMBINED	97.81	24.08	4.06	0.02	87.79

Pecking order theory cannot fully apply to sectors in the manufacturing industry. Not in accordance with the initial hypothesis that the bank-based system will encourage an increase in DER in all sectors. In the domestic financial market, excessive volatility often occurs during a crisis (Warjiyo, 2014). The existence of the uncertainty volatility increases short-term debt greater than the long-term debt. STD because it reduces the long-term uncertainty in the use of debt (Silva et al, 2013).

Total DER shows that the debt ratio is still small compared to equity and is not significantly different. At the same time,research result does not show full support for pecking order theory, only the BIG sector has an average DER of 1, resulting in a draw between debt and equity financing.as it builds up a solid diagram for the remainder of the

procedure to pursue – prompting the most ideal finished result.

Description of the data regarding the impact of religious aspects on capital structure decisions (table) shows the median DER in companies with Islamic culture (JII) is lower than non-JII (table 6)

The average of other firms using Debt compared to equity is 3 times greater, whereas in JII the use of debt is smaller than the use of equity. Compared to the mean of the manufacturing industry, the non-JII firms have mean of others is greater than JII. Non-JII firms have standard deviation is greater than JII firms which is interpreted to be a greater DER variability on the others. Meanwhile interquartile also shows 75% DER in non-JII firms is greater than JII listed firm. Overall, the primary difference between the non JII firms and JII forms is the much larger variance in debt level

Table 6. DER between JII and other

	Others	JII-Islamic Culture
The mean	3,158674	0.779286
Standard Error	1.906774	0.077723
Median	0.91	0.625
Mode	0.35	1.02
Standard Deviation	51.30604	0.503705
Sample Variance	2632.31	0.253719
Kurtosis	663,444	0.392401
Skewness	25,14699	0.87194
Range	1489.53	2.04
Maximum	1352	2.14
Minimum	-137.53	0.1
Sum	2286.88	32.73
Count	724	42

The results of the inferential testing show there are insignificant differences, these results are likely to be accidental and cannot be used as generalizations. Or in other words, that there is no difference in the median DER in companies with Islamic religion and others (table 7)

Table 7. Kruskal-Wallis DER between JII and other

	Others	Islamic Culture	
the median rank	0.91	0.625	
sum	280165	13596	
count	724	42	766
r ^ 2 / n	1.08E + 08	4401219	1.13E + 08
D-stat			3.244079
H-ties			3,24419
df			1
p-value			0.071677
alpha			0.05
sig			no

There is insignificant difference in the debt ratio preference between non JII and JII firms, but Gunn and Shackman (2013) explain that firms that cultivate Islam are more on the choice of short term debt and long term debt, not the choice of debt or equity. Firms that are Islamic and in Islamic countries tend to use short-term debt rather than long-term debt. The results of this study imply that JII Firms are flexible enough to allow financing through other than equity so that the DER ratio on JII firms has relatively the same as the others. The result is consistent with Rahim et al (2019) in Malaysia which explains that there is insignificant difference between Muslim and non-Muslim CEOs in using capital structure. Meanwhile, if JII has been able to form a corporate culture, then the absence of differences in capital structure is due to disobedience in carrying out the religion of Islam as a whole in life (Rahim et al, 2019). Because the philosophia of Islam are more pushing on equity (profit sharing) rather than on debt

V. CONCLUSION

Research shows the results contrast with the prediction, that there are significant differences in CGI sector companies compared in other the manufacturing industry, however this result does not applyto other sectors. In addition to not supporting the bank-economic system, it also does not support a significant overall over the pecking order theory. The company does not always translate debt compared to equity because of the volatility of interest in the long-term money market

The objective found that the differences in the capital structure of firms with Islamic culture, namely JII and non-JII firms, and find the results to be insignificant. The results indicated that JII firms have not been able to implement Islamic Sharia in all firm decisions. Besides, JII firms are better able to access non-debt funding sources that are better or equal to non-JII

The research has considered variations in DER that might be caused by other than Islamic culture, therefore using it in the same industrial sector, namely manufacturing. However, research has limitations, namely assuming there is no difference in the level of Islamic culture in every firm indexed in JII

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