

# “Board structure, ownership structure, and capital structure: Empirical evidence on Shariah and non-Shariah compliant firms in Indonesia”

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# BOARD STRUCTURE, OWNERSHIP STRUCTURE, AND CAPITAL STRUCTURE: EMPIRICAL EVIDENCE ON SHARIAH AND NON-SHARIAH COMPLIANT FIRMS IN INDONESIA

## Abstract

The main purpose of this study is to investigate the impact of board structure and ownership structure on capital structure of Shariah-compliant firms and Non-Shariah-compliant firms in Indonesia. The study used the Generalized Method of Moments to analyze the relationship by applying 2,739 data observations of non-financial companies registered on the Indonesia Stock Exchange. This study uses commissioner size, director size, female director, female commissioner, independent director, and independent commissioner as proxies for board structure, and ownership concentration and government ownership for ownership structure. The results showed that for Sharia-compliant firms, the relevant determinants are all variables of board structure and ownership structure except independent director. For Sharia non-compliant firms, the only non-relevant determinants are female director and commissioner size. Interestingly, most of the board structure variables in Shariah compliant firms indicate a strong negative relationship with capital structure of firms (except total commissioner). This may indicate that board structure of Shariah compliant firms strives to lower the leverage level of the firm. This may also indicate that most managers of Shariah compliant firms are risk averse.

## Keywords

capital structure, board structure, ownership structure, sustainable growth

## JEL Classification

G20, G30, G34

## INTRODUCTION

Capital structure is a crucial topic for a firm as it influences the firm's financing cost and, therefore, significantly affects the firm's value (A. Chowdhury & S. Chowdhury, 2010). In addition, capital structure means the management decisions on the mixture composition between debt and equity, which greatly affect the performance of the firm (Abdullah & Tursoy, 2019), average employee pay of the firm (Chemmanur et al., 2013), and investment efficiency (Eisdorfer et al., 2013). For instance, a negative relationship between capital structure and firm profitability was observed by Sheikh and Wang (2011). The authors contend that it is caused by agency issues that lead firms to use debt more than their appropriate capacity, which in turn enhances the lenders' influence and reduces the manager's efficiency. The limitation of the manager's ability to supervise the firm due to the intervention of lenders is deemed to negatively affect the performance of the firm. In addition, recent research shows the impact of capital structure on the liquidity and growth of corporations (Salman, 2019). Furthermore, A. Chowdhury and S. Chowdhury (2010) also proposed that capital structure greatly determines a firm's market value.



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The significant impact of the capital structure decision of a firm drives researchers to discuss the factors determining the capital structure decision. Further, research regarding the influence of corporate governance factors has been intensively discussed. Frank and Goyal (2009) found that the median industry leverage, market to book asset ratio, profitability, tangibility, and asset significantly determine the decision of capital structure in publicly listed American firms from 1950 until 2003. Li and Islam (2019) reported that firm-specific factors and industry-specific factors influence capital structure decisions, both directly and indirectly. Interestingly, they found that the relationship between firm-specific variables and debt ratio varied across industries.

Furthermore, past researchers also made significant contributions to the literature on the influence of corporate governance and capital structure. For example, corporate governance proxies such as board size, board composition, CEO duality, institutional ownership, and management ownership, according to Javaid et al. (2021), have a substantial indirect impact on a company's capital structure. On the other hand, Amin et al. (2022) confirmed that board size and independent board have a positive and significant relationship on a firm's capital structure preference, whereas the CEO duality factors have a negative and significant impact on leverage. Nguyen et al. (2022) also showed that the corporate governance index seems to have a positive influence on a firm's level of leverage. In other words, a firm with a better corporate governance index will tend to borrow more. Interestingly, the force to borrow more debt will lessen as the national governance quality increases.

Current research on capital structure also noted the determinants of capital structure in Shariah compliant firms. A study by Yildirim et al. (2018) for example, which explores determinants of capital structure in Shariah compliant firms and non-Shariah-compliant firms, revealed that the majority of the determinants have distinct effects on each type of firms. Unfortunately, minimum literature analyzes the factors that influence the capital structure of companies that adhere to Islamic Shariah norms and standards, especially in Indonesia, despite their position as the top 4 in global Islamic indicator ranking (Dinar Standard, 2022).

Furthermore, despite the massive literature on capital structure determinants, there is still inadequate comprehension regarding this issue (Haron, 2014). Moreover, there is insufficient empirical research assessing the effects of corporate governance on capital structure in Shariah-compliant and non-Shariah-compliant firms. In an attempt to enlighten this part of the study, this study tries to inquire into the determinants of capital structure in Indonesia in the case of Shariah-compliant and non-Shariah-compliant firms, especially in terms of corporate governance, which includes board structure and ownership structure of the firm.

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## 1. LITERATURE REVIEW

The earliest empirical research on the influence of corporate governance on financing decisions was the emergence of the agency problem. Jensen and Meckling (1976) showed that the existence of an agency problem might decrease the expected future cash flows and enhance the risk of default as the result of the irrational operation and poor corporate governance conducted by the borrower, which resulted in the creditor demanding a premium, which leads to the increase of the financing cost of a firm. The investor often treats the firm's proxy of corporate governance as its benchmark

in determining the financing cost that it will offer. In other words, sound and good corporate governance will enhance a firm's soundness and eventually assist the management in gaining the investor's trust. By doing so, the management could acquire financing at a lower cost.

Bhojraj and Sengupta (2003) were among the researchers who suggested that sound corporate governance will effectively decrease a firm's financing cost. They measured the level of corporate governance by using the proxy of independence of the board and a firm's concentration ownership to prove the relationship between corporate

governance and capital structure. The result of the study marked that the increase in the independence of the board of directors or scattered ownership would lessen the firm's financing cost. Pae and Choi (2011) found that firms could lower their cost of equity with more comprehensive corporate governance practices. In other words, they suggested an inverse relationship between corporate governance and the cost of equity.

Knowing the importance of corporate governance in reducing a firm's cost of financing, many researchers have attempted to establish empirical research on the relationship between board structure and ownership structure and capital structure. The most generally studied proxies were board size, board gender, board independence for board structure proxies. Whilst for ownership structure proxies, government ownership and ownership concentration are used (Kyriazopoulos, 2017; Amin et al., 2019; S. Vijayakumaran & R. Vijayakumaran, 2019).

As a firm's highest policy-making body, an efficient and effective board is essential to the firm's performance and survivability. Along with that, it has the utmost responsibility to implement strategic management to ensure the firm's growth and boost its profit for maximizing the return to its investors. Many researchers have investigated its influence on capital structure decisions of firms. Berger et al. (1997), Dasilas and Papasyriopoulos (2015), and Kyriazopoulos (2017), for example, suggested that the bigger board tends to bring more pressure on the management as the management would ensure that the leverage level of the firm is low enough for the sake of firm performance, since higher debt will enhance the financial burden on the firm.

Independent board is another proxy used by researchers as the proxy of corporate governance of firms. Alves et al. (2015) asserted that companies with a higher proportion of independent directors on their boards would have a capital structure that is more based on external capital than on retained profits. This finding is supported by Tarus and Ayabei (2016). They argued that the existence of independent directors represents strong boards that are greatly associated with greater leverage, as suggested by Kyriazopoulos (2017). Further, they

stated that a larger fraction of independent directors on the boards would substantially eliminate information asymmetries between managers and investors, thus reducing the cost of external financing of a firm. The notion is further supported by the findings of Anderson and Reeb (2004), who show that having an independent board in board structures is linked to more affordable cost of debt financing.

On the relationship between female boards and the use of leverage, prior studies such as Mascia and Rossi (2017) provide evidence that female-led enterprises are more likely to face worse pricing terms for bank loans compared to their male-led firms. In addition, a change of gender from female to male at the top leadership of a company is associated with better financial conditions, such as a lower interest rate on loans. Possible explanations that they offered are, firstly, women may be perceived as less competent than men in operating a business in the eyes of bank officials. (Alesina et al., 2013). As a result, the bank loan conditions may become less favourable to the firm due to the bank executives' execration. Secondly, women could be charged higher for bank loans than men because they have less bargaining competencies when dealing with loan officers (Croson & Gneezy, 2009). Another study by Faccio et al. (2016) showed that female boards' existence tends to lower the firm's usage of leverage. In line with the above premise, Huang and Kisgen (2013) imply that women are less likely for using loans than men. They claim that the results supported with the risk-aversion hypothesis.

Empirical studies have also noted the adverse effects of ownership concentration on the information asymmetry problem of a firm. Vo (2019) indicated that large shareholder ownership concentration is positively and significantly related to a firm's information asymmetry. Moreover, Shiri et al. (2016) found that information asymmetry is higher in firms with a more concentrated ownership structure. They explain their result by relying on the self-interest hypothesis, which states that institutional investors and major investors have higher incentives for accessing personal data and information for investment objectives. This, in turn, leads to situations where they are less likely to be engaged in actively monitoring the

daily activities of a firm and instead may be more concerned in the firm's disclosure. Hence, these situations will lead to the increase of information asymmetry and in turn, elevate agency problems. In line with this premise, Farooq (2015) suggests that there is a negative association between ownership concentration and leverage. He argued that high information asymmetry problems, which are significantly associated with firms with high ownership concentration, impair the capability of the firm to raise debt. Furthermore, Santos et al. (2014) also provided evidence of the negative association between ownership concentration and capital structure. They offer five possible explanations:

- 1) the substitution hypothesis between capital structure and ownership structure as corporate governance mechanisms;
- 2) greater risk resistance as a consequence of having an investment portfolio that is inadequately diversified;
- 3) the consequence of debt that may force limits on the behaviour of block-holders;
- 4) to prevent the monitoring of their behavior by lenders; and
- 5) the fact that their existence increases equity financing potential of firms.

Past research also noted that higher leverage is commonly linked with government ownership. State Ownership Enterprises (SOEs), for example, tend to borrow rather than issue stocks to avoid the diminishment of state control over the firm (Dewenter & Malatesta, 2001). Furthermore, having access to loan guarantees helps SOEs borrow money at reduced interest rates and mitigates the likelihood of a financial disaster. In addition, Phi et al. (2019) argued that state-owned enterprises are more dependent on debt to finance their projects, which results in SOEs having a higher level of leverage opposite to private firms. A further report by Kornai (as cited in Amin, 2019, p. 3154) also suggested that SOEs may get financing from the government at cheap interest rates to fund their new projects with minimal concern of insolvency. The federal government may step

in and help a company with public funds if the SOEs are unable to successfully implement the project. If the government fails to take action, it will be liable for a political price and run the risk of attracting the criticism of labor unions. Therefore, according to tradeoff theory, to gain the optimum level of tax benefit, there is a positive relationship between government ownership and leverage.

Despite abundant literature on the impact of board structure and ownership structure on capital structure of firms, the studies regarding Shariah compliant firms and non-Shariah-compliant firms are still scarce. Therefore, this study aims to fill the gap of previous studies by exploring all proxies related to the relationship of corporate governance in terms of board structure and ownership structure and capital structure in Shariah compliant firms and non-Shariah-compliant firms. Therefore, the following hypotheses are formulated:

*H1a: Director Size has a negative relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H1b: Commissionaire Size has a negative relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H2a: Independent Director has a positive relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H2b: Independent Commissionaire has a positive relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H3a: Female Director has a negative relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H3b: Female Commissionaire have a negative relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H4: Ownership Concentration has a negative relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

*H5: Government Ownership has a positive relationship with leverage in Shariah-compliant firms and non-Shariah-compliant firms in Indonesia.*

## 2. METHODOLOGY

This study is based on companies listed on Indonesia Stock Exchange (IDX) from 2007 until 2020. However, not all companies are incorporated into the model as the author considers the effect of “sector,” which classified companies based on their main activity in the analysis. Therefore, company sectors that do not fit with the model due to fundamental reasons are excluded. The financial sector, which includes banks, insurance and real estate companies, complies with different rules and regulations that make them differ from other companies, hence have a high probability of affecting the analysis and disrupting results. Furthermore, numerous studies excluded financial companies from their samples such as Kyriazopoulos (2017), and Granado-Peiró and López-Gracia (2016).

Therefore, the first criterion for data screening is to exclude all financial institutions. Secondly, ensuring the availability of the data has a minimum of 3-year data during 2007–2020. The analysis of this study requires two data sets: Shariah-compliant firm data set, and non-Shariah-compliant data set. Firstly, the number of companies that match the criteria above are 378. For the first data set, the shariah compliant firm, the selection criteria are the companies listed in Daftar Efek Syariah (shariah compliant list) by OJK or BAPEPAM LK on the November list. The argument on why only November is because the data from OJK and BAPEPAM LK regarding the February list is only partially available. Furthermore, the company with data for less than three years will be excluded from the data set.

Further, Shariah compliant firms included in this study should meet a certain criteria, following Ramli and Haron (2017), that is, to maintain

their status as Shariah compliant firms every single year beginning from 2007 and continuing through 2020. Therefore, companies that comply with Shariah only in specific year will not be regarded as Shariah-compliant firms. It is important that companies are included in Shariah listing in all years to ensure the Shariah compliant status of the firms. The total number of companies included in the dataset after the screening process is 163. For the second data set, all companies that have not been included in the list of Shariah-compliant list OJK are included in this data set. After the screening process, the total number of companies included in this data is 215.

The data for this study are mainly divided into two classifications: ownership-related data and finance-related data. Ownership (top ownership and government ownership) and board-related data (size of director, independent director, female director, commissioner size, independent commissioner, female commissioner) are manually collected directly from the source, the annual report of a firm. Although this process is time-consuming, it guarantees data accuracy as a result of professional auditing. In addition, financial-related data are extracted directly from Thomson’s DataStream database, a worldwide renowned data source. Table 1 contains additional information regarding the operationalization of these variables.

The two-step System-GMM method was used in this study (Arellano & Bover, 1995; Blundell & Bond, 1998). According to Zamzamin et al. (2022), when regressors are persistent, it is preferable to use System-GMM as compared to First Difference-GMM. It has been argued that System-GMM is deemed preferable to First Difference-GMM due to its lower bias and higher accuracy. In addition, System-GMM is not limited to dealing with endogeneity; it may also include time-invariant explanatory variables. The consistency and validity of the model’s instruments was confirmed using the Hansen Test (1982). The AR(1) and AR(2) test was used to test serial correlation of the error term. For the AR(1), the null hypothesis should be rejected. More importantly, failure to reject the null hypothesis of AR(2) test reflects a robust regression of the model and implies that the original error term is serially uncorrelated (Blundell & Bond, 1998).

**Table 1.** Description of variables

Variable	Description of a variable
<b>Dependent variable</b>	
Leverage	Total Liability to Total Asset
<b>Independent variables</b>	
Director Size	Total director
Independent Director	Ratio of independent director over total director
Female Director	Ratio of female director over total director
Commissionaire Size	Total commissionaire
Independent Commissionaire	Ratio of independent commissionaire over total commissionaire
Female Commissionaire	Ratio of female commissionaire over total commissionaire
<b>Control variables</b>	
Age	Age of the firm (from listing in IDX)
Tangibility	Ratio of net fixed asset to total asset
Firm Size	Log natural of total asset
Non-Debt Tax Shield	Depreciation to total asset
Growth opportunity	Market capitalization to book value of equity (Market Value + liabilities)/total asset
Profitability	Return on equity EBIT to total asset

As a robustness check, other models with alternative independent variables will be created by using current liability to total asset (CLTA) for Shariah compliant and non-Shariah-compliant firms. Similar approach was employed by Al-Mustofa and Sukmana (2021) for robustness check.

### 3. RESULT

The mean variation over the study period is examined (see Table 2). The dependent variable TLTA has its highest value in 2007 (0.52) and its lowest value in 2017 (0.47). The subprime mortgage crisis, which affects the entire world, may have an impact on the leverage of the company in our sample and force them to incur more debt in order to ascertain their financial position as a result of the crisis. The mean TLTA decreased steadily until the end of the study period, indicating that companies were recovering and stabilizing throughout the duration of the study. Intriguingly, the companies' leverage is stable at the end of 2020, despite the COVID-19 crisis. One argument that may explain this situation is that companies may have learned from the financial crisis of 2007–2009, and in the face of uncertainty, they may not wish to take on additional financial burden. Another argument from the perspective of the borrower is in the face of immense global unpredictability, the borrower may become more hesitant to lend more debt.

Concerning means of TLTA across the study period, according to Table 3, the Shariah Compliance Firm mean's value is lower than that of their counterparts or non-Shariah-compliant firms. This result is consistent with the finding of Alnori and Alqahtani (2019), which stated that compared to their non-shariah compliant counterparts, sharia-compliant businesses use far less leverage and make fewer adjustments more slowly. In addition, Islamic businesses are characterized by social commitments and moral standards; the Shariah's moral structure is founded on morals and ethics. It must strictly adhere to Shariah law and Islamic moral values that have been stipulated in Islamic law. The rules are also applied in terms of investment and project of Islamic compliant firms, Islamic law (Shariah) has stipulated that all the investment and projects must be permissible by Islamic law. Therefore, stricter rules on the use of capital are applied in Shariah compliant firms. The low level of leverage in Shariah compliant firms is indeed logical, since managers must carefully assess the project that could be done by them.

Further, ownership concentration data shows that on average, firms in the samples are 0.5209 or 52%. This means that on average top shareholder ownership in the firms' sample hold 52% of ownership of firms. The ownership of public Indonesian companies is extremely concentrat-

**Table 2.** Mean of variables of corporate governance for the study period (2007–2020)

Variables	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TLTA	0.520	0.518	0.487	0.499	0.506	0.499	0.503	0.488	0.475	0.474	0.470	0.472	0.472	0.472
Director size	5.722	5.778	5.268	5.476	5.228	5.245	4.986	5.091	5.541	5.031	4.928	4.913	4.744	4.599
Independent director	0.000	0.006	0.028	0.025	0.049	0.048	0.064	0.098	0.126	0.153	0.164	0.170	0.103	0.065
Female director	0.100	0.146	0.074	0.086	0.088	0.104	0.112	0.120	0.127	0.136	0.137	0.137	0.137	0.162
Commissionaire size	6.000	6.167	5.341	5.111	5.040	4.789	4.435	4.509	4.794	4.306	4.278	4.197	4.198	4.038
Independent commissionaire	0.338	0.367	0.378	0.388	0.393	0.389	0.398	0.388	0.402	0.404	0.395	0.407	0.407	0.415
Female commissionaire	0.090	0.067	0.075	0.073	0.049	0.073	0.105	0.097	0.102	0.115	0.121	0.122	0.115	0.118
Top ownership	0.485	0.488	0.524	0.523	0.529	0.517	0.510	0.517	0.511	0.505	0.524	0.527	0.534	0.536
Government ownership	0.039	0.038	0.051	0.039	0.041	0.041	0.035	0.038	0.038	0.029	0.027	0.025	0.024	0.023

ed, as demonstrated by this data. This is in line with the findings of Utama et al. (2017), who argue that in Indonesia, it is typical for public traded corporations to have just a small number of shareholders who control extremely high shares.

This study examined the potential presence of multicollinearity using the Variance Inflation Factor (VIF). All the data set has been counted for their VIF and the result is presented in Table 4. Multicollinearity issues are likely to be neglected if the value of VIF was lower than 10, and the tolerance factor (1/VIF) was higher than 0.10. Table 4 shows the result of the VIF test and tolerance coefficient for all variables. From the table, the highest value of VIF was 5.13 and the lowest value of tolerance factor was 0.194. These results suggested that the VIF and tolerance coefficient were within acceptable levels and gave confidence to the models that the impact of multicollinearity issues between explanatory variables in adopted regression models was very limited.

**Table 4.** Correlation diagnostic test result

Variable	Shariah-Compliant		Non-Shariah-Compliant	
	VIF	1/VIF	VIF	1/VIF
Director Size	1.69	0.591134	1.64	0.608938
Independent Director	1.14	0.87881	1.07	0.938607
Female Director	1.19	0.841003	1.08	0.923307
Commissionaire Size	1.76	0.567902	1.67	0.600003
Independent Commissionaire	1.21	0.829334	1.05	0.953363
Female Commissionaire	1.07	0.938308	1.04	0.963273
Top Ownership	1.12	0.891465	1.06	0.946521
Government Ownership	1.17	0.851565	1.19	0.841643
Age	1.1	0.907456	1.1	0.910233
Net Fixed Asset / Total Asset	1.46	0.685999	1.07	0.938619
Firm Size (Natural Log of Total Asset)	1.88	0.531879	1.88	0.531239
Ndts	1.41	0.707971	1.11	0.897678
Growth	5.13	0.194856	1.5	0.668504
Tobins Q	4.66	0.214509	1.13	0.883953
ROE	1.79	0.55897	1.46	0.686365
EBIT / Total Asset	1.74	0.573073	1.11	0.898916

Table 5 presents the impact of corporate governance in terms of board structure and ownership

**Table 3.** Descriptive statistics of Shariah-compliant dataset

Variables	Shariah-Compliant Firms			Non-Shariah-Compliant Firms		
	Mean	Median	Std. dev.	Mean	Median	Std. dev.
TLTA	0.386	0.3705	0.1768	0.5453	0.2351	0.2072
Director size	4.7507	5	1.4633	4.5798	5	1.4662
Independent director	0.1108	0	0.1347	0.1062	0	0.1395
Female director	0.139	0	0.1814	0.1236	0	0.1731
Commissionaire size	4.1431	4	1.497	4.0331	4	1.487
Independent commissionaire	0.3839	0.3333	0.1325	0.412	0.4	0.1297
Female commissionaire	0.1057	0	0.1768	0.1074	0	0.1771
Top ownership	0.5209	0.5151	0.2123	0.5216	0.523	0.2125
Government ownership	0.0276	0	0.134	0.0326	0	0.1385

structure on capital structure of Shariah compliant firms and non-Shariah-compliant firms. In terms of board size, the result of the relationship between board of director size and capital structure is negative on both Shariah compliant firms and non-Shariah-compliant firms. However, in terms of commissioner size, the relationship is positive only on Shariah compliant firms.

It is interesting to note that, with the exception of total commissioner, board structure variables in Shariah compliant firms show a strong negative relationship with capital structure of the firms. This might mean that boards of Shariah-compliant firms have a strong tendency to reduce their leverage. This may also suggest that the Boards in Shariah-compliant businesses are risk averse. This is consistent with Haron (2016), who suggests that due to their Shariah-compliant preference for equity-based financing, they may lower their debt ratio. This condition will attract the majority of Islamic investors who have tendencies to invest in low-risk and low-debt companies.

With respect to the board of director size, its negative influence on leverage can be explained by the fact that a larger board reflects more pressure on the management to pursue low leverage since bigger debt will enhance the financial burden on the firm and worsen the performance of the firm. This result is in line with Berger et al. (1997) and Dasilas and Papasyriopoulos (2015).

**Table 5.** Determinants of leverage

Variables	Shariah-Compliant Firms Model 1	Non-Shariah-Compliant Firms Model 2
Lagged Dependent (Total Liability to Total Asset)	0.994***	34.69***
	-0.031	-0.731
Corporate Governance variables		
Total Director	-0.134***	-30.62***
	-0.039	-5.039
Independent Director	0.028	10.67**
	-0.026	-5.024
Female Director	-0.0873***	4.185
	-0.03	-6.361
Total Commissioner	0.0466***	2.824
	-0.016	-3.304
Independent Commissioner	-0.0690***	18.90***
	-0.02	-5.359

Variables	Shariah-Compliant Firms Model 1	Non-Shariah-Compliant Firms Model 2
Female	-0.0520**	15.85***
Commissionaire	-0.021	-6.093
Ownership	0.161***	34.78***
Concentration	-0.054	-11.62
Government	-0.244**	196.7***
Ownership	-0.12	-64.66
Firm Specific variables (Control variables)		
Age	-0.00361	-0.619***
	0	-0.179
Net fixed asset to Total Asset	-0.0232	36.44***
	-0.03	-7.147
Firm Size	0.0181***	-4.583***
	-0.005	-1.45
Non-Debt Tax Shield	-1.358***	154.0***
	-0.348	-19.26
Growth	0.001	0.300***
	-0.002	-0.0484
Tobins Q	0.0265***	-9.389***
	-0.009	-0.604
ROE	-0.0186	-1.167***
	-0.027	-0.315
EBIT	-0.362***	136.7***
	-0.068	-6.365
Constant	-0.246***	85.04***
	-0.078	-27.51
Number of Observations	874	1361
Number of groups	162	214
AR(1)	0.001	0.21
AR(2)	0.281	0.436
Hansen Test	0.981	0.773

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Return on Equity (ROE), Earnings before interest and taxes to total assets, Growth opportunity (Tobins Q and market capitalization to book value of equity).

Meanwhile, the positive relationship between commissioner and capital structure in Shariah-compliant firms could be explained by the function of debts, which perform as a monitoring device of boards to control the behavior of a manager (Jensen, 1986). In other words, debt constrains agency costs of free cash flow by generating a disciplining effect and contriving a challenging environment where the manager needs to ensure the profit of the firm is sufficient to meet the debt's principal plus interest. Further, Coles et al. (2008) report that firms with more advanced advising requirements have a larger board size and suggested that board effectiveness is positively associated with its size for firms with more complex advising requirements. Other works provide evidence that the size of the board has a positive relation-

ship with the firm's voluntary disclosure level (Al-Nimer, 2019). As stated by Guidara et al. (2014), a firm's voluntary disclosure has an inverse association with the cost of debt. Hence, these situations will lead to the increase in a firm's leverage. Additionally, Chau and Gray (2002) argue that a bigger board may represent dispersed ownership of the corporations (compared to concentrated ownership of the firm), which can improve both the transparency and quality of the company's reporting to the public.

In terms of independent boards, in the Shariah compliant dataset, the result proves a negative impact of independent commissioner and capital structure of the firms. According to Wen et al. (2002) and Feinerman (2007), the presence of independent boards of a firm will enhance the overall monitoring capability of the firm to ensure the manager's behavior at their best performance. Facing enhanced monitoring, a firm's managers will be forced to bring down the leverage level of the firm to eliminate an excessive risk carried out by the use of debt. Stricter monitoring of independent directors may also cause managers to employ a lower level of leverage to avert the performance pressure associated with the obligation to pay the interest and the principal amount of the debt (Jensen, 1986). This is consistent with Elmagrhi et al. (2018).

Whilst in non-Shariah-compliant dataset, consistent with the work of Alves et al. (2015), a positive impact between an independent director and independent commissioner on capital structure of the firm is observed. One of the arguments to support this finding is that larger fraction of independent directors on the boards would substantially eliminate information asymmetries between

managers and investors, thus reducing the cost of external financing of a firm.

Regarding the female presence on board, in terms of Shariah compliant dataset, the negative relationship is presented. This result is consistent with Faccio et al. (2016) and Huang and Kisgen (2013) who showed that the presence of women on the board of directors tends to reduce a firm's use of leverage. In terms of non-Shariah-compliant firms dataset, a positive relationship between female commissioner and capital structure of the firms is revealed. This finding is consistent with Usman et al. (2019). They contend that the presence of female directors on the board reduces the risk of opportunistic management behavior and asymmetry of information. In turn, this condition will reduce creditors' perception of the likelihood of loan default, resulting in a reduction in the cost of debt.

In regards to ownership concentration of firms, both Shariah compliant firms and non-Shariah-compliant firms revealed a positive impact between top ownership and capital structure, which is in line with Haron et al. (2021). One of the possible arguments is that the creditor might see the situation where the higher ownership means higher control over the firms which could reduce agency problems of shareholder-manager (principal-agent) by aligning the interests of managers and internal shareholders (La Porta et al., 1999). In turn, the creditor may see this situation as beneficial to the company and may reduce the company's probability of default, leading to the reduction of the company's cost of the loan, hence suggesting a positive relationship between concentrated ownership and the debt level of the firm (capital structure).

**Table 6.** Hypothesis testing result

Hypothesis	Shariah-Compliant Firms	Non-Shariah-Compliant Firms
H1a: Director size has a negative relationship with leverage	Accepted	Accepted
H1b: Commissioner size has a negative relationship with leverage	Rejected	Rejected
H2a: Independent Director has a positive relationship with leverage	Rejected	Accepted
H2b: Independent Commissioner has a positive relationship with leverage	Rejected	Accepted
H3a: Female Director has a negative relationship with leverage	Accepted	Rejected
H3b: Female Commissioner has a negative relationship with leverage	Accepted	Rejected
H4: Ownership Concentration has a negative relationship with leverage	Rejected	Rejected
H5: Government Ownership has a positive relationship with leverage	Rejected	Accepted

**Table 7.** Robustness check

Variables	TLTA		CLTA	
	Shariah-Compliant Firms Model 1	Non-Shariah-Compliant Firms Model 2	Shariah-Compliant Firms Model 3	Non-Shariah-Compliant Firms Model 4
Lagged Dependent (Total Liability to Total Asset)	0.994*** -0.031	34.69*** -0.731	0.760*** -0.0277	29.84*** -0.923
<b>Corporate Governance variables</b>				
Total Director	-0.134*** -0.039	-30.62*** -5.039	-0.0616*** -0.0169	-18.06*** -2.865
Independent Director	0.028 -0.026	10.67** -5.024	0.012 -0.0134	8.281** -4.08
Female Director	-0.0873*** -0.03	4.185 -6.361	-0.112*** -0.0252	8.382** -3.286
Total Commissionaire	0.0466*** -0.016	2.824 -3.304	0.0302*** -0.00971	-3.152 -1.964
Independent Commissionaire	-0.0690*** -0.02	18.90*** -5.359	0.00467 -0.0159	19.26*** -3.086
Female Commissionaire	-0.0520** -0.021	15.85*** -6.093	0.00608 -0.0182	15.88*** -4.411
Ownership Concentration	0.161*** -0.054	34.78*** -11.62	0.0590*** -0.0181	6.576 -5.844
Government Ownership	-0.244** -0.12	196.7*** -64.66	-0.0149 -0.0126	204.6*** -49.16
<b>Firm Specific Variables (Control variables)</b>				
Age	-0.00361 0	-0.619*** -0.179	0.000332 -0.00031	-0.734*** -0.115
Net fixed asset to Total Asset	-0.0232 -0.03	36.44*** -7.147	-0.0833*** -0.0218	33.69*** -6.161
Firm Size	0.0181*** -0.005	-4.583*** -1.45	0.00224 -0.00289	-3.582*** -1.037
Non-Debt Tax Shield	-1.358*** -0.348	154.0*** -19.26	-0.337** -0.158	114.2*** -12.51
Growth	0.001 -0.002	0.300*** -0.0484	-0.00466** -0.00228	0.0879** -0.0437
Tobins Q	0.0265*** -0.009	-9.389*** -0.604	0.0254*** -0.0074	-3.016*** -0.443
ROE	-0.0186 -0.027	-1.167*** -0.315	0.00437 -0.00989	-0.454 -0.298
EBIT	-0.362*** -0.068	136.7*** -6.365	-0.164*** -0.0454	102.4*** -4.984
Constant	-0.246*** -0.078	85.04*** -27.51	0.0556 -0.0528	72.26*** -20.64
Number of Observations	874	1361	874	1,361
Number of groups	162	214	162	214
AR(1)	0.001	0.21	0	0.193
AR(2)	0.281	0.436	0.604	0.485
Hansen Test	0.981	0.773	0.961	0.804

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Return on Equity (ROE), Earnings before interest and taxes to total Asset, Growth opportunity (Tobins Q and market capitalization to book value of equity).

Regarding the government ownership, another interesting finding is that, for Shariah compliant dataset, there is a negative relationship with capital structure. Whereas for non-Shariah-compliant dataset, there is a positive relationship with

the capital structure of the firms. For, non-Shariah-compliant dataset, it is consistent with the facts that the average of mean of TLTA of government ownership is higher than Shariah compliant dataset and non-Shariah-compliant data-

set (0.584), compared to Shariah-compliant firms and non-Shariah-compliant firms (see Table 3). However, interestingly, in Shariah-compliant firms, the government ownership negatively increases the firm's leverage level. The positive relationship between government ownership and capital structure is consistent with the work of Dewenter and Malatesta (2001) which found out that State Ownership Enterprises (SOEs) tend to borrow rather than issue stocks to avoid the diminishment of state control over the firm. In terms of the negative relationship between government ownership and capital structure, this is in line with S. Vijayakumaran and R. Vijayakumaran (2019). They argue that state ownership may constitute of risk averse managers with weak manage-

rial incentive, which, in turn, will avoid debt and prefer low level of debt. Another reasonable argument is keen to maintain the Shariah-compliant status of certain firms, which may therefore force managers to carefully select the firms project, ultimately leading to a fall in the firms' leverage levels.

The Robustness check was conducted using alternative independent variables of TLTA, which is current liability to total assets (CLTA). As reported in Table 6, by using the same methods, generalized method of moments, the regression results are essentially similar to the one with TLTA as independent variables. It is also consistent with the previous hypotheses, demonstrating that the conclusion of this paper is robust.

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## CONCLUSION

The purpose of this study is to analyze the relationship between board structure, ownership structure, and capital structure of Shariah-compliant enterprises and those of non-Shariah-compliant enterprises. The study shows that the board and ownership structure of a company have a significant effect on the company's leverage ratio. More crucially, the study reveals a significant positive relationship between ownership concentration and overall leverage in both Shariah-compliant and non-Shariah-compliant firms, which is consistent with the incentive alignment concept proposed by Jensen and Meckling (1976). This eventually reduces the agency cost, enhances creditors perception, and in turn lowers the cost of loan.

Another interesting result is that most of the board structure variables in Shariah-compliant firms indicate a strong negative relationship with capital structure of the firms (except total commissionaire). This condition may imply that board structures of Shariah-compliant firms are risk averse managers with a propensity toward reducing the amount of debt.

This study assesses the impact of board structure and ownership structure on capital structure of Shariah-compliant firms and non-Shariah-compliant firms in Indonesia. This study tries to fill the literature gap regarding this issue. The study offers financial managers of organizations several helpful recommendations and real-world applications. Policymakers may also utilize the study's findings to develop better corporate governance and capital structure policies. The findings could also be employed by practitioners and managers to evaluate the efficiency of a company's current corporate governance methods in achieving the desired optimum capital structure level.

The current study is limited to a certain set of board structure and ownership structure. For a more comprehensive study, some variables such as foreign ownership, managerial ownership, and board structure education level could be included in equation.

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