

## AN ORDERED LOGIT MODEL FOR PREDICTING CORPORATE SUKUK RATINGS IN MALAYSIA AND INDONESIA

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### ARTICLE INFO

#### Article history :

**Received:**

07 January 2025

**Revised:**

03 July August 2025

**Accepted:**

11 September 2025

### ABSTRACT

*This research aims to examine the association accounting information quality (accrual quality and cash flow management), corporate governance, sukuk structures, and guarantee status to affects corporation sukuk rating. This research used criteria and methodology general approach sukuk rating published by sukuk rating agency such as PEFINDO, RAM and MARC. Using sukuk rating as dependent variable, ordered logit model is selected to test research variable. This research finds that accrual quality, sukuk structure, status guarantee, and firm size positively associated with sukuk rating. However, profitability, leverage, and growth variables were not have associated with sukuk rating.*

**Keywords:** *sukuk rating, quality accrual, sukuk structure, sukuk guarantee*

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## INTRODUCTION

*One of the Islamic financial instruments that has experienced very rapid growth until now is sukuk. Apart from the increasing types of sukuk structures, the value of sukuk issuance both globally and domestically continues to increase. Based on a report from the International Islamic Financial Market (IIFM, 2023), until 2022 Malaysia is the largest sukuk issuing country in the Asian region with a value of USD 842,477 and Indonesia is the second largest sukuk issuer with a value of USD 142,279. In addition, the Outstanding value of domestic sukuk based on data from IIFM as of December 31, 2022 shows a value of USD 611.77 billion, with a corporate sukuk composition of 21%. The rapid growth of sukuk in Malaysia and Indonesia, especially for corporate sukuk, is an indication of a positive response from financial market players. Sukuk can be an alternative corporate funding apart from issuing bonds or shares, therefore it is necessary to sukuk rating so that sukuk holders can have information on the potential performance of the sukuk.*

*Rating is a tool of measurement the level of credit risk or default risk that describes the level of investment security and indicates the quality of sukuk issued (Weissova et al., 2015). Sukuk ratings are an indication of the company's ability to pay financial obligations, and aim to reduce information asymmetry between sukuk issuers and investors. It is expected that relevant information regarding default risk can be received by sukuk holders before deciding to invest in the intended sukuk (Ismail & Arundina, 2019; Mseddi & Naifar, 2013). The rating agency is an institution whose role is to conduct an assessment and evaluation of the sukuk issued, then the rating is announced as a signal of the quality of the sukuk to the market (Melzatia et al., 2019; Muhamed et al., 2022).*

*Each rating agency has a different approach to the rating method, although the main focus is generally the same, which is to pay attention to the risk factors attached to the sukuk. RAM uses an approach to assess sukuk ratings based on qualitative and quantitative factors (RAM, 2011a). Qualitative factors include the quality of accounting information, ownership and management structure, sukuk structure, and credit enhancement such as guarantee status. Quantitative factors are categorized such as financial performance, cash flow, and company revenue. Previous studies on sukuk are still not as much as bond research. Of the many factors that influence sukuk ratings, most previous studies have only examined one group of variables, such as financial factors only, governance factors only, or macro factors only. Until 2023, no sukuk rating research has been conducted more broadly regarding sukuk ratings using the rating agency method approach and the inherent sharia value. In addition, there are still few sukuk rating studies that conduct cross-country analysis, while the development of sukuk is quite massive in various countries in Asia, the Middle East, or Europe. This research considers conducting corporate sukuk rating research in Malaysia and Indonesia, as the largest sukuk issuing countries in the world and in the same regional area, namely ASEAN.*

## THEORETICAL FRAMEWORK AND EMPIRICAL STUDIES

*Sukuk is a new form of Islamic financial instrument from the form of debt instruments that can be used as an alternative to corporate funding, so sukuk is also called sharia bonds (IIFM, 2023). Sukuk is a plural word for sakk which means proof of ownership because it is taken from a meaning similar to a certificate or notes. Or in other words, as a certificate or proof of ownership of the same value that is not divided or inseparable from an asset, beneficial rights, and services or ownership of a certain project or investment activity (Homsy et al., 2023). To find out whether the sukuk issuing company is able to repay the sukuk in accordance with the contract, one of them is by looking at the rating attached to the sukuk. Sukuk ratings are issued by rating agencies such as Standard & Poor's Ratings Services (S&P), Moody's, and Fitch Ratings as international rating agencies. Rating Agency Malaysia (RAM), Malaysian Rating Corporation Berhad (MARC), and PT Pemeringkat Efek Indonesia (PEFINDO) are domestic rating agencies for Malaysia and Indonesia, respectively, if the corporate sukuk issued are domestic sukuk. The ratings published by the rating agencies play a role in providing informative signals and statements regarding the probability of default, and monitor the quality of the sukuk issued. The rating will indirectly describe the health of the company as well as the overall quality of the company (Kartiwi et al., 2018). Signal theory develops from the existence of a form of information asymmetry that occurs, which describes a condition in which one party has more information than another party (Scott, 2012). The existence of this information asymmetry condition will cause only one party to benefit because it has more information, and the condition of the other party will be disadvantaged. The Malaysian and Indonesian governments issued regulations regarding sukuk issuance guidelines, which also regulate the rating of each sukuk issued. Rating agencies do not provide any recommendations for transaction purposes nor do they provide an opinion on the Shariah principles attached to the sukuk, and only those related to the risk of the debt as the opinion provided (RAM, 2011b). The methodology used by each rating agency is different, although basically the purpose of the assessment is the same, namely assessing the level of risk of the company, and providing an independent opinion. S&P, Moody's, Fitch, MARC, RAM are rating agencies that are experienced in rating sukuk. In general, rating agencies will conduct an assessment using factors such as, 1) market analysis, 2) key company transactions, 3) asset and cash flow analysis, 4) legal analysis, and 5) financial risk.*

*One of the company's performances that is considered by rating agencies is cash flow, so that in predicting cash flow the information obtained must be of high quality. Quality information indicates low information asymmetry, while when the quality of accruals is low, it indicates high information asymmetry. Accruals are considered to be able to predict the company's cash flow in the future better, compared to current cash flow. The quality of accounting information affects the estimation of the company's cash flow in repaying its debt (Bharath et al., 2006; Qizam & Fong, 2019). The quality of accrual plays a role in explaining the mapping of profit figures to cash flows, so that if the quality of*

*accruals is low, it means that the mapping is weak and the risk of information will increase, which then the prediction of future cash flows will also be weak (Francis et al., 2005). RAM (2011) states that the quality of accounting information is one of the factors considered in evaluating the reliability of the financial data presented. Rating agencies rely on the information contained in financial statements, as they are the primary source of information that is most readily available.*

*Sukuk is one of the Islamic financial funding, where both investors and issuers as sukuk issuers can choose the risk. This is of course due to the different types of risks inherent in its structure. Rating agencies focus heavily on these structures and apply different rating methods, whether the sukuk structure is asset-backed which means it will focus on the assets, or asset-based which will focus on the cash flow. The risk of each sukuk scheme is of course also different, and rating agencies will not use the same approach to assess the risk of each sukuk. (Muhammed et al., 2022) stated that sukuk use the principle of part of the ownership of debt if murabahah, assets if ijarah, project cooperation if musharakah, or investment if istishna. So that each contract in the inherent structure has its own risks and this has an impact on the rating method used by the rating agency (Homsy et al., 2023). (Arundina et al., 2015; Godlewski et al., 2014) in his research on eight countries that issued sukuk and compared each structure, found that the choice of sukuk structure is important as evidenced by the positive market reaction when an ijarah sukuk is issued compared to a musharakah sukuk.*

*The underwriting status provides the same assumptions as the quality rating of the issued sukuk. The sukuk guarantee status can be a form of strong protection for sukuk holders, because with the guarantee status, there will be priority payments to sukuk holders (Borhan & Ahmad, 2018). The guarantee status is usually issued by a third party or can be issued by the company itself. The third party in providing guarantee status is considered to have strong capabilities to fulfill its commitment, that the payment of the sukuk value will be paid if there is a possibility of default. The company can also issue a guarantee status for its sukuk, this is related to the classification of junior and senior sukuk. Sukuk that has a guarantee status has a higher level of security and has a lower default risk compared to those that do not have a guarantee status (Homsy et al., 2023). Sukuk holders will certainly have a higher trusted value if they invest in sukuk that has a guarantee status. So sukuk that has a guarantee status will have a higher likelihood of obtaining a high rating from a rating agency than sukuk that does not have a guarantee status.*

*The size of the company is the main indicator in the "safe" assessment for a company, the higher the assets a company has, the higher the protection. In addition, large companies are better able to manage their business risks when there is a change in the economic situation, and also in terms of finances, large companies have better flexibility than small companies because they are able to find various sources of funding. When the size of the company is getting larger, the better it can manage its risk, and will reduce the possibility of default risk.*

*The leverage variable is measured by comparing total liabilities with total assets, which will measure the company's ability to pay long-term debt as well as debt as a whole. Arundina et al. (2015) stated that companies that have a high leverage rate have high credit risk, because it indicates the use of high debt in the company in financing its investments. In other words, if this ratio is high, it means that the company uses more debt to finance its business operations, thus causing the company to be vulnerable to financial difficulties, and usually has a considerable risk of bankruptcy. The larger the company's debt ratio, the lower the sukuk in obtaining a higher rating because the company has a higher risk in paying its sukuk.*

*Profitability variables are used to measure the company's ability to generate profits. Arundina et al. (2015) states that one of the credit risk indicators is seen from the company's current and previous period profitability, because profit is one source of company performance in carrying out its operations. Companies experiencing financial difficulties usually start from an indication of negative profits, so that when the profitability ratio is high, it can provide an idea that the company's management performance is good. This ratio uses return on assets (ROA) as a proxy for profitability variables, to measure the extent to which the company is able to use its assets to generate profits, as well as measure the company's fundamental performance. When the company is more profitable or can maximize the profit performance of its assets, the lower the default risk will be. So that the more profitable the company, the more it will increase sukuk in obtaining a better sukuk rating.*

*The growth variable or company growth is proxied by using the percentage of the previous year's sales. This variable is considered because company growth will indicate the company's cash flow prospects in the future and increase economic value (Rinarningsih, 2014). Therefore, company growth has a strong and positive relationship with the rating that will be given by the rating agency (Melzatia et al., 2019). The higher the company's sales growth rate, the higher the sukuk to get a higher sukuk rating because of the better cash flow prospects from its growth.*

## **RESEARCH METHODS**

*This study is quantitative research, which is used to be able to estimate an observed event using nonparametric calculations, because the type of data used is ordinal and combined with ratios. This study uses samples and observation data from companies that issue sukuk in Malaysia and Indonesia. The selected sukuk is corporate sukuk from non-financial issuers whose shares are listed on Bursa Malaysia (KLSE) and Indonesia Stock Exchange (IDX). The observation sample used is the ranking of each sukuk product owned by the originator company every year. The ranking taken is the ranking that is published last time each year if the ranking is published more than once and has the same ranking. The collection of corporate sukuk samples in Indonesia can be obtained directly from the PEFINDO website. Meanwhile, sukuk samples in Malaysia were obtained through the Malaysian Security Commission and the Malaysian Bond Pricing Agency. The dependent*

variable used in this study is the sukuk rating, whose data was obtained from PEFINDO for Indonesia. As for the sukuk rating from Malaysia, it is obtained from RAM & MARC. The independent variables of accrual quality, and financial ratios such as company size, leverage, profitability and growth were obtained from the Refinitiv eicon, while the independent variables of sukuk structure and underwriting status were obtained from the company's rating agency website & annual report. For the dependent variable, the sukuk rating uses measurements by performing a rating classification (Homsy et al., 2023) consisting of:

Rating Category 5: AAA (investment grade)

Rating Category 4: AA+, AA, AA-, AA1, AA2, AA3 (investment grade)

Rating Category 3: A+, A, A-, A1, A2, A3 (investment grade)

Rating Category 2: BBB+, BBB, BBB-, BBB1, BBB2, BBB3 (investment grade)

Rating Category 1: BB+, BB, BB-, BB1, BB2, BB3, B+, B, B-, B1, B2, B3, CCC+,

CCC, CC, CC1, CC2, CC3, C1, C2, C3, D (non – investment grade)

The order measurement of the sukuk rating used refers to several studies that use similar measurements, including Ashbaugh-skaife et al. (2006), Elhaj, Muhamed, & Ramli (2015), Geiszler (2014). For the first independent variable in accrual quality, it uses the accrual abnormal measurement developed by Dechow & Dichev (2002) which was used in the study of Ames, Hines, & Sankara (2014). 
$$AVGAccruals_t = \beta_0 + \beta_1 CFO_t + \beta_2 CFO_{t+1} + \beta_3 CFO_{t+2} + \varepsilon_t$$

The second independent variable is sukuk structure, using the type of contract used such as ijarah, mudharabah, murabahah, musyarakah, and istisna. This sukuk structure will use a sukuk structure dummy, with 4 dummy categories where 1 structure will be a comparison dummy or based. The next independent variable is guarantee status which is part of credit enhancement. Measurement for guarantee status uses a dummy guarantee status, value 1 if the sukuk issued has a guarantee from the originator company in the form of a corporate guarantee (cg), or from a third party such as a bank guarantee (bg), and others 0. Or 2. If the sukuk has a senior sukuk status, it is given a value of 1, and others 0. The independent variable firm size is measured using the natural logarithm of the company's total book value assets. The leverage variable is measured by dividing total book value liabilities to total book value assets. The profitability variable is measured by dividing between earnings before interest & tax to total book value assets. And the growth variable is measured using the percentage of sales between year  $t$  and year  $t-1$ .

$$\begin{aligned} Rating_{idijt} = & \beta_0 + \beta_1 Acc_{ijt-1} + \beta_2 DIJAR_{ijt} \\ & + \beta_3 DMUR_{ijt} + \beta_4 DMUD_{ijt} + \beta_5 DMUS_{ijt} + \beta_6 DGUAR_{ijt} \\ & + \beta_7 SIZE_{ijt-1} + \beta_8 LEV_{ijt-1} + \beta_9 ROA_{ijt-1} + \beta_{10} GROWTH_{ijt-1} \\ & + \varepsilon_{ijt} \end{aligned}$$

## RESULTS AND DISCUSSIONS

Table 1 shows the results of descriptive statistics. The ACC variable which is the independent variable of accrual quality, the average number shows -0.0108. ACC shows the residual value of the accrual component, the smaller the residual value, the higher the accrual component can predict cash flow, which means the higher the accrual quality. From the mean number in the descriptive statistics, it can be concluded that the average company in the sample has high accrual quality. The next independent variable is DIJAR, DMUR, DMUD, DMUS as a sukuk structure variable.

**Table 1.**  
**Descriptive Statistics**

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
<b>RATING_ID</b>	267	3.8913	1.0687	1	5
<b>ACC</b>	267	-0.0108	0.0942	-0.5495	0.4602
<b>DIJAR</b>	267	0.4120	0.4931	0	1
<b>DMUR</b>	267	0.3220	0.4682	0	1
<b>DMUD</b>	267	0.0712	0.2576	0	1
<b>DMUS</b>	267	0.1723	0.3784	0	1
<b>DGUAR</b>	267	0.3446	0.4761	0	1
<b>SIZE</b>	267	16.721	3.5596	9.7309	22.5026
<b>LEV</b>	267	0.8462	2.1959	0.0243	29.4303
<b>ROA</b>	267	0.1901	0.5193	-0.5747	3.1867
<b>GROWTH</b>	267	0.0787	0.2342	-0.5454	2.1765

Source: data analyzed (2024)

The mean value for DIJAR is 0.4120, this indicates that of the average sample size of 41.2% is sukuk ijarah. The mean value for DMUR is 0.3220, which means that 32.2% are murabaha sukuk. The mean value of DMUD is 0.0712, meaning that the average mudharabah sukuk is 7.12%. And the DMUS variable, has a mean value of 0.1723 or 17.23% is sukuk musharakah. The fifth independent variable is DGUAR which is a guarantee status variable for sukuk issued. The mean value shows a figure of 0.3446, which indicates that of the total sample of 34%, the average sukuk issued has a guarantee status. SIZE variable as a company size variable, which shows an average of 16.721, which means that the average total assets owned by the sample companies is 18,274,186 US Dollars. The second control variable is LEV as a leverage variable, which shows an average of 0.8462 or 84.62% which indicates that debt is still the main alternative in funding company activities. The third variable for the control variable is ROA from the profitability ratio which shows an average of 0.1901 or 19.01%, which means that the effectiveness of asset management by the company is still lacking, because the return is only 19%. The last control variable is GROWTH for company growth with an average of 0.0787 or 7.87%, and this indicates that the average company growth is quite low.

The significance test on ordered logit model determines whether the independent variable affects the dependent variable or not. The coefficient value can be used to determine the direction of the variable relationship, but the implications of changes in the

coefficient value cannot be read in the same way as OLS. The coefficient value can only be interpreted as the log odds value, which is generally also rarely used because it is difficult to read the implications of the change value.

**Table 2.**  
**Ordered Logit Regression Test Results**

<i>Variabel Dependen : Rating_id</i>		
<i>Var Independen</i>	<i>Koefisien</i>	<i>P-Value</i>
ACC	4.4133	0.005**
DIJAR	7.1707	0.000***
DMUR	6.8037	0.000***
DMUD	5.9314	0.000***
DMUS	7.3868	0.000***
DGUAR	1.3820	0.000***
SIZE	0.0991	0.075*
LEV	-0.0366	0.465
ROA	-0.3581	0.314
GROWTH	-0.2910	0.562

Source: data analyzed (2024)

Table 2 shows that ACC as a variable from hypothesis 1 shows results that have a positive effect on sukuk ratings, with a significance level of 5% ( $0.005 < 0.05$ ). When viewed from the coefficient value, it means that an increase of 1 unit of ACC will increase 4.4133 log odds to get a higher rating on the sukuk rating, assuming all other things are equal. The variables DIJAR, DMUR, DMUD, and DMUS are variables from hypothesis 4, namely sukuk structure, with the category of four (4) dummy variables because it consists of five (5) variables. The four dummy variables showed a positive effect on the sukuk rating with a significance level of 1% ( $0.000 < 0.0001$ ). By using the coefficient value, it can be interpreted that each increase of 1 unit of DIJAR will increase 7.1707 log odds to obtain a higher rating on the sukuk rating. Every 1 unit increase in DMUR will increase 6.8037 log odds of obtaining a higher rating on sukuk rating. Every 1 unit increase in DMUD will increase 5.9314 log odds of obtaining a higher rating on the sukuk rating. Every 1 unit increase in DMUS will increase 7.3868 log odds of obtaining a higher rating on the sukuk rating. The next variable is DGUAR as a hypothesis 3 variable which shows a significant positive effect with a significance level of 1% ( $0.000 < 0.0001$ ). That is, every 1 unit increase in DGUAR will increase 1.3820 log odds of obtaining a higher rating on the sukuk rating.

Profitability variable has a positive effect on sukuk rating, and the other three variables have no effect. This means that, every 1 unit increase in SIZE will increase 0.0991 log odds to get a higher rating on the sukuk rating. The regression results in table 2 show that accrual quality has a positive effect on sukuk ratings, and these results support hypothesis 1. In accordance with these results indicate that companies that have high



*accrual quality will increase sukuk in obtaining higher ratings. This is possible because the accounting information presented in the financial statements is the main source of information when conducting the rating process. Therefore, the company will strive to provide quality information, or in accordance with the actual situation. (Ames et al., 2014; Ashbaugh-skaife et al., 2006; Bharath et al., 2006; Geiszler, 2014; Santoso et al., 2022) that accrual quality has a positive effect on bond ratings.*

*Four dummy variables that show the sukuk structure variable in table 2 show the results of a positive effect on sukuk ratings to answer hypothesis 2. This indicates that any inherent sukuk structure will increase sukuk to obtain a higher rating. MARC (2012) and RAM (2008) also mention that the sukuk structure is a very important factor in sukuk ratings, namely whether it is included in asset-backed or asset-based because the inherent risk characteristics are also different (Homsy et al., 2023). However, for the type of sukuk contract, whether ijarah, mudharabah, murabahah, musharaka or istisna, there is no theory that states that each type of contract has a higher risk than the other. However, when viewed in terms of the risks that will be faced or considered directly by investors, of course, each type of sukuk contract has a different risk (Muhammed et al., 2022).*

*The test results shown in table 2 indicate that the guarantee status has a positive effect on the sukuk rating to answer hypothesis 3. This indicates that any sukuk that has a guarantee status has an increase in obtaining a higher rating. This result supports the statements of MARC (2012) and RAM (2008), that the status of guarantee or credit enhancement is taken into account as a factor in the priority of sukuk rating. Security status can be provided by third parties such as bank guarantees or corporate guarantees, or structural protection such as subordinate or junior status. The existence of guarantee status or structural protection indicates the quality of the sukuk, which is related to the risks inherent in the sukuk.*

*In the Size variable as a measurement of company size in hypothesis 4, table 2 shows the results have a positive effect on sukuk ratings. Empirical evidence shows that companies with high profitability are more likely to achieve higher ratings. This implies that companies that want to obtain and maintain a AAA sukuk rating must consistently generate large profits. It is the responsibility of the company's management team to invest the funds raised through Sukuk effectively. These investments are intended to increase shareholder wealth and increase corporate profits. As a result, as the company's profitability increases, its Sukuk rating is likely to improve.*

*In hypothesis 5, the results showed no effect between the leverage variable and the sukuk rating. This may indicate that the leverage factor is not the only indicator of company risk, but rating agencies may have a more in-depth assessment to assess the company's risk component.*

*Hypothesis 6 also shows insignificant research results between profitability and sukuk ratings. This is likely because rating agencies do not only rely on the company's profit performance in conducting assessments, but rating agencies provide more assessment of the ability to pay such as the availability of cash flow compared to profits.*

*Hypothesis 7 also shows insignificant results between the growth variable and the sukuk rating. This result indicates that the possibility of rating agencies not only provide an assessment of its sales ability, but also look at the company's industry competition and the risks faced in the industry as stated by RAM and MARC.*

## **CONCLUSION, SUGGESTION, AND LIMITATION**

*This study was conducted to test whether the quality of accounting information using accrual quality, tribal structure, guarantee status, company size, profitability, leverage and growth has an influence on sukuk ratings. Based on the test results and analysis of accrual quality has a positive effect on sukuk ratings, which indicates that companies that have high accrual quality will increase sukuk in obtaining higher sukuk ratings. For the sukuk structure variable has a positive effect on the sukuk rating, which indicates that any inherent sukuk structure will increase sukuk to obtain a higher sukuk rating. For the guarantee status variable has a positive effect on the sukuk rating, which indicates that any sukuk that has a guarantee status has an increase in obtaining a higher sukuk rating. The company size variable has a positive effect on the sukuk rating, which indicates that larger companies have a higher probability of obtaining a better sukuk rating. While the profitability, leverage and growth variables show the results have no significant effect on the sukuk rating. This reflects that high or low profitability, leverage, and growth have the same possibility of getting a better rating.*

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