

The Solvency Level of Sharia Insurance Companies in Indonesia (A Critical Analysis Study)

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Abstract. This study aimed to determine the determinants of the solvency level of Islamic insurance companies in Indonesia. The independent variables used in this study are BOC, BOD, SSB and SOC, tabarru' funds, contribution, investment growth, RBK, inflation and GDP. While the control variables used are size, volume of capital, leverage and liquidity as control variables. The sample in this study used a purposive sampling technique, namely 43 companies with a total number of 215 observations. The observation period was from 2017-2021 and the data analysis method used the data regression panel which was processed using E-views 12 software. Based on the test results, it was shown that simultaneously BOC, BOD, SSB and SOC, tabarru' funds, contribution, investment growth, RBK, inflation and GDP affect the solvency level. partially, the board of commissioners, tabarru' funds and investment growth have a positive effect, while SOC, contribution and RBK have a negative effect on the solvency level of Islamic insurance companies in Indonesia. Meanwhile, BOD, SSB, Inflation and GDP have no effect on the level of solvency.

Key Words: Solvency Level, financial performance

Introduction

The Islamic financial institution industry has recently experienced rapid development, even in the 2020 Islamic Finance Development Indicators (IFDI) report, Indonesia is set to become the second country experiencing rapid development in the Islamic finance sector after Malaysia¹. The Islamic finance industry consists of banks and the nonbank financial industry (IKNB). One of the IKNB industries is sharia insurance. The sharia insurance industry is a service industry that helps and protects

¹ Icd-refinitiv Islamic Finance and Development Report, *Progressing Through Development*, 2020.

fellow insurance participants through the formation of a pool of funds (*tabarru'*) which will be managed according to sharia principles to address certain risks². As of August 2021, the number of the sharia insurance industry is 60 companies. When viewed from the growth in the number of the sharia insurance industry, it indicates that public awareness and need for sharia insurance industry services continues to increase. This will certainly have an impact on increasing the collection of funds from the community. As company funds increase due to the purchase of sharia insurance products, a problem arises where most of the solvency levels (ability to meet obligations) of sharia insurance companies actually experience a decline³. The following is data on the solvency level of Islamic insurance companies in Indonesia:

Table 1 Data Solvency Level

Year	Solvency Level	The increase decrease
2017	1619%	0%
2018	988%	-631%
2019	902%	-85%
2020	1088%	186%
2021	826%	-262%

Source: Processed from 43 Sharia Insurance Financial Reports, (2022)

Referring to the table 1 about data solvency level, it can be seen that the average solvency level of sharia insurance companies from 2017 to 2021 has always decreased, except in 2020. The highest decline occurred in 2018 which was 631%. This shows that the Islamic insurance industry has not been consistent in maintaining the level of solvency of its companies. This solvency level can provide an overview of the condition of the financial soundness of a sharia insurance institution with respect to its ability to fulfill insurance and reinsurance obligations. The smaller the solvency level, the faster the insurance company will be in bankruptcy. The goal of a sharia insurance company will be achieved if the level of financial soundness can meet the threshold level of solvency that is set, which is 120% of the risk of loss. If the solvency level reaches

² Peraturan Menteri Keuangan, "Menas9_1389348862.Pdf," 2010.

³ Wildan Dwi Dermawan, "Analisis Risk Based Capital Untuk Mengetahui Kesehatan Keuangan Asuransi Di Indonesia," *Forum Ekonomi* 23, no. 1 (2021): 12-19, <http://journal.feb.unmul.ac.id/index.php/FORUMEKONOMI>.

a minimum of 100%, the adjustment period will be given within a certain period of time until the specified threshold is reached ⁴. If the solvency level of the sharia insurance company meets the specified threshold, it can be said that the company will be able to fulfill all its obligations so that in the end it can increase the confidence of the insurance participants ⁵.

Several studies on the level of solvency of the Islamic insurance industry, compared solvency as measured by Risk Based Capital (RBC) with Good Corporate Governance (GCG) variables and financial components ⁶. Research by Awrasya & Kusumaningtias (2021) shows that there is a relationship between GCG and the level of solvency of Islamic insurance companies. Hemrit's (2020) research proves that board size has an influence on financial performance. According to Wasiuzzaman & Gunasegavan (2013), GCG is one of the most important factors affecting performance ⁷. The existence of good governance is intended to be able to determine the direction of company performance carried out by management, company boards, stakeholders and shareholders. Financial performance can reflect how successful the parties in Islamic insurance companies are in managing finances as a mandate from insurance participants to manage their funds. If the financial performance is high, the solvency level will also be high. According to Dermawan (2021), the level of solvency is influenced by financial components, including profitability. Since sharia insurance companies in carrying out their operational activities are different from

⁴ Menteri Keuangan Republik Indonesia, "Peraturan Menteri Keuangan Republik Indonesianomor 53/Pmk.010/2012 Tentang Kesehatan Keuangan Perusahaan Asuransi Dan Perusahaan Reasuransi," 2012, 1-38, <https://www.ojk.go.id/id/kanal/iknb/regulasi/asuransi/peraturan-keputusan-menteri/Pages/peraturan-menteri-keuangan-nomor-53-pmk-010-2012-tentang-kesehatan-keuangan-perusahaan-asuransi-dan-perusahaan-reasuran.aspx>.

⁵ J F Awrasya and R Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah," *Jae (Jurnal Akuntansi ...)*, no. 2017 (2021): 13-26, <https://doi.org/10.29407/jae.v6i2.15830>.

⁶ Dermawan, "Analisis Risk Based Capital Untuk Mengetahui Kesehatan Keuangan Asuransi Di Indonesia."

⁷ Fahri Ali Ahzar, Samsul Rosadi, and Asiah Wati, "Corporate Governance, Karakteristik Dewan Pengawas Syariah Dan Maqoshid Sharia Index Pada Perbankan Syariah Di Indonesia," *AKTSAR: Jurnal Akuntansi Syariah* 4, no. 2 (2021): 241, <https://doi.org/10.21043/aktsar.v4i2.12730>.

conventional insurance companies, the right ratio to measure their profitability is to use surplus on contribution⁸. This surplus generally refers to the excess amount of contributions or contributions in the takaful fund after taking into account the burden of claims paid, the amount to be paid for contributions/refunds including the allocation of reserves and investment gains obtained from the fund⁹. The amount of surplus obtained can be a source of internal funding in bearing risks for Islamic insurance companies. If the surplus is high, the company's solvency level will also increase.

In addition to profitability, other financial components used as independent variables in this study include *tabarru'*, contribution, investment growth, claims expense ratio (RBK), inflation and GDP. The research of¹⁰ found that *tabarru'* funds had an effect on financial performance, in contrast to the research of¹¹ where the results of his research did not have a significant effect. Hasanah & Kamal's research (2022) proves that contributions, claims and GDP have an effect on the financial performance of Islamic insurance, while inflation has no effect. Alifianingrum & Suprayogi's research, (2018) also proves that contribution variables, claim expenses and investment affect the financial performance of Islamic insurance companies. In contrast to the research of Safitri & Suprayogi (2017) where the claim expense ratio has no effect on financial performance. While the results of Hemrit's research (2020) show that inflation actually has a significant influence on financial performance. The researcher also includes control variables in his research including Size (company size), volume of capital (VOC), leverage and liquidity. Referring to the background as well as the phenomenon of the results of previous studies which still have gaps, it is important to

⁸ Hamim Syahrums Ahmad Mokhtar, Izwayu Abdul Aziz, and Noraziyah Md. Hilal, "Surplus - Sharing Practices of Takāful Operators in Malaysia," *ISRA International Journal of Islamic Finance* 7, no. 1 (2015): 99–126, <https://doi.org/10.12816/0021398>.

⁹ Mokhtar, Abdul Aziz, and Hilal.

¹⁰ Happy Sista Devy et al., "Tabarru' Fund and Solvability In Affecting The Profitability of The Life Insurance Sharia in Indonesia" 8, no. 02 (2022): 1318–23.

¹¹ Estiningtyas Kusuma Safitri and Noven Suprayogi, "Analisis Rasio Kesehatan Keuangan Dana Tabarru' Yang Mempengaruhi Profitabilitas Pada Asuransi Syariah Di Indonesia (Periode 2012-2014)," *Jurnal Ekonomi Syariah Teori Dan Terapan* 4, no. 1 (2017): 73, <https://doi.org/10.20473/vol4iss20171pp73-88>.

conduct this research to determine the factors that affect the level of solvency of the sharia insurance industry in Indonesia, so that it can be used as information and considerations in order to maintain the level of solvency that reflects the health of the company can remain, so that the community believes that the company is capable of managing its funds. In addition, what distinguishes the previous studies from this research is the addition of the surplus on contribution (SOC) variable as an independent variable.

Legitimacy theory is a theory about the social contract between companies and the community where the community has the right to determine the allocation of other financial/economic resources ¹². Legitimacy theory has a relationship with the dependent variable in this study, namely the level of solvency, where the core of this theory is to explain the relationship between entities and society. In this case, Islamic insurance companies have social responsibility in building a corporate image which is indicated by the company's ability to pay its obligations very well ¹³.

Stewardship theory has a correlation with the GCG variable as an independent variable in this study. This theory explains that because management is considered responsible for all actions and always focuses on moral behavior and common interests, management is trusted by stakeholders to manage company funds. In sharia insurance companies, the management of funds from the beginning aims to be used for the common interest by applying the principle of mutual help, so that the problem of differences in interests between insurance participants as owners of capital and management as agents does not apply to sharia insurance companies ¹⁴.

Signalling theory has a correlation with independent variables

¹² Dina Arfianti Siregar Entherthiman Galvani Tampubolon, "Pengaruh Profitabilitas Dan Ukuran Perusahaan Terhadap Pengungkapan Tanggungjawab Sosial Pada Perusahaan Asuransi Yang Terdaftar Di Bursa Efek Indonesia," *AKUNTABILITAS: Jurnal Penelitian Dan Pengembangan Akuntansi* 12, no. 1 (2019): 69-80, <https://doi.org/10.29259/ja.v12i1.9309>.

¹³ Awrasya and Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah."

¹⁴ Awrasya and Kusumaningtias.

such as surplus on contribution (SOC), claims expense ratio (RBK), *tabarru'* funds, contribution and investment growth which are used as a tool in measuring the financial performance of Islamic insurance companies. These ratios can be information that can minimize problems caused by information asymmetry, so that it fits with signaling theory because the essence of this theory is to reduce asymmetry of information between management and shareholders ¹⁵.

Solvency is the ability of a company to meet its needs and obligations which are calculated using risk-based capital (RBC). This RBC becomes the basis for measuring the health level of Islamic insurance companies ¹⁶. According to KMK No. 424.06/2003 the threshold value is said to be a healthy sharia insurance company or not, namely when the value is at least 120% ¹⁷. According to DJLK No. 5314/LK/1999 Minimum Solvency Level Limit (BTSM) is the minimum amount of solvency level that is determined and consists of a number of funds used to cover the risk of loss due to the implementation of deviant KMK principles. These components are also called risk based capital (RBC), so it can be concluded that BTSM is the same as risk based capital ¹⁸.

Corporate governance according to The Indonesia Institute for Corporate Governance (IICG) is a process and structure used to run a company, with the main objective of increasing shareholder value while recognizing the long-term interests of other stakeholders. Currently, GCG is getting increasing attention as many financial scandals appear in the business environment ¹⁹. In the insurance GCG guidelines it is stated that the board of commissioners, board of directors and supervisory board

¹⁵ Awrasya and Kusumaningtias.

¹⁶ Awrasya and Kusumaningtias.

¹⁷ Menteri Keuangan Republik Indonesia, "Keputusan Menteri Keuangan Republik Indonesia Nomor 424/KMK.06/2003 Tentang Kesehatan Keuangan Perusahaan Asuransi Dan Perusahaan Reasuransi," 2003.

¹⁸ Tevi Leviany and Wiwin Sukiati, "Pengaruh Risk Based Capital Terhadap Profitabilitas Pada Perusahaan Asuransi Jiwa," *Jurnal ASET (Akuntansi Riset)* 6, no. 1 (2017): 1, <https://doi.org/10.17509/jaset.v6i1.8993>.

¹⁹ Maya Sari, "Penerapan Good Corporate Governance Dalam Meningkatkan Kinerja Keuangan," *Prosiding The National Conference on Management and Business (NCMAB)* 2018, 2018, 17-27, <https://publikasiilmiah.ums.ac.id/bitstream/handle/11617/9880/2.MayaSari.pdf?sequence=1&isAllowed=y>.

have a very important influence in implementing governance in Islamic insurance companies in Indonesia. When viewed from agency theory, a smaller board size can have an effect on low performance. This is due to difficulties in coordinating and communicating. On the other hand, a larger board size can handle and process a large amount of depth of information regarding the complexity of the company's operations so that it can provide advice and input to management in the development of higher company performance. In this case the higher board is more likely to be able to perform an advisory role to management in a better way ²⁰. In this study, GCG is measured by:

a. Board of Commissioners

The board of commissioners is a board formed with the task of supervising and providing input for management to the directors of the company. A smaller number of board sizes can have an effect on lower performance, on the other hand, if viewed from agency theory, the more boards of commissioners, the higher the performance will be. This is because it is assumed that there are no difficulties in coordination and communication ²¹. The size of the board of commissioners can be measured by the total number of members of the board of commissioners in sharia insurance companies ²². Referring to the literature review, the hypotheses for this variable are:

H₁: The board of commissioners has a positive effect on the level of solvency.

b. Board of Directors

The board of directors is a board that is elected to be responsible for representing the interests of shareholders and plays an important role in improving the company's performance. The research of ²³ shows that

²⁰ Wael Hemrit, "Determinants Driving Takaful and Cooperative Insurance Financial Performance in Saudi Arabia," *Journal of Accounting and Organizational Change* 16, no. 1 (2020): 123-43, <https://doi.org/10.1108/JAOC-03-2019-0039>.

²¹ Hemrit.

²² Awrasya and Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah."

²³ D Kusmayadi, I Firmansyah, and ..., "The Role of Sharia Committee and Board of Director in Improving The Performance of Islamic Insurance

the directors' policies greatly affect the productivity of employees so that their work is carried out well. On the other hand, too many directors who produce policies that are different from other directors can reduce motivation to employee productivity. The size of the board of directors can be seen from the total number of members of the board of directors in sharia insurance companies ²⁴. The hypotheses proposed based on the description are:

H₂: The board of directors has a positive influence on the level of solvency.

c. Sharia Supervisory Board (DPS)

DPS is a board formed with the task of supervising the company's activities in accordance with sharia rules and principles ²⁵. Supervision is carried out professionally to protect management and insurance participants by providing input on inappropriate policies. The existence of DPS is not to limit management in innovating, but only to ensure all activities run according to sharia principles. The more DPS, the more they will be able to contribute to increasing company performance ²⁶. The size of the DPS can be determined by looking at the total number of members of the sharia supervisory board in sharia insurance companies ²⁷.

H₃: Sharia Supervisory Board (DPS) has a positive effect on the level of solvency.

Surplus on Contribution (SOC) is a measuring tool used to assess financial performance in the Islamic insurance industry ²⁸. If the surplus value is higher, it reflects the higher the company's performance. This

Companies," *Turkish Journal of ...* 13, no. 02 (2022): 31-42, <https://turcomat.org/index.php/turkbilmal/article/view/12117>.

²⁴ Awrasya and Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah."

²⁵ Hemrit, "Determinants Driving Takaful and Cooperative Insurance Financial Performance in Saudi Arabia."

²⁶ Kusmayadi, Firmansyah, and ..., "The Role of Sharia Committee and Board of Director in Improving The Performance of Islamic Insurance Companies."

²⁷ Awrasya and Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah."

²⁸ Mokhtar, Abdul Aziz, and Hilal, "Surplus - Sharing Practices of Takāful Operators in Malaysia."

surplus value can help the existence of Islamic insurance companies in the long term which will have an impact on increasing financial performance ²⁹. If the financial performance increases, the solvency level will also increase.

H₄: Surplus on Contribution (SOC) has a positive effect on the level of solvency.

The *tabarru'* fund is a social fund and is one of the main funds whose use mechanism is to help each other between participants and the company cannot use it as company funds ³⁰. This *tabarru'* fund will then be managed, for example, invested by the company. If the amount of *tabarru'* funds increases the company's *ujrah* income will also increase ³¹. This *tabarru'* fund is only owned by sharia insurance companies and is unique so that it is not easily imitated, transferred or replaced by conventional insurance companies which will affect the financial performance of sharia insurance companies so that the company's solvency level will also increase ³². Research by Devy, Anaqoh, & Fakir (2022) shows that *tabarru'* funds have a significant influence on financial performance. Referring to the research, the formulation of the hypothesis in this study is:

H₅: Tabarru' funds have a positive effect on the level of solvency.

According to Sula (2004) in ³³ contribution is a form of cooperation between insurance participants (submitting fund contributions) and the company, so that the company is obliged to provide coverage in accordance with the contribution of funds provided

²⁹ Ai Fitri Nurlatifah and Sepky Mardian, "Kinerja Keuangan Perusahaan Asuransi Syariah Di Indonesia: Surplus on Contribution," *Akuntabilitas* 9, no. 1 (2016): 73–96, <https://doi.org/10.15408/akt.v9i1.3590>.

³⁰ Devy et al., "Tabarru' Fund and Solvability In Affecting The Profitability of The Life Insurance Sharia in Indonesia."

³¹ Sofiyatul Munawaroh and Hasan Mukhibad, "Determinan Yang Mempengaruhi Financial Performance Pada Perusahaan Asuransi Umum Syariah Di Indonesia," *IQTISHADIA Jurnal Ekonomi & Perbankan Syariah* 6, no. 2 (2019): 155–66, <https://doi.org/10.19105/igtishadia.v6i2.2425>.

³² Munawaroh and Mukhibad.

³³ Firliyati Hasanah and Mustafa Kamal, "Faktor Determinan Perolehan Surplus (Defisit) Underwriting Dana Tabarru' Pada Asuransi Jiwa Syariah," *Jurnal Auntansi Dan Keuangan Islam (P-ISSN: 2338-2783) (E-ISSN:2549-3876)* 10, no. 1 (2022): 55–74.

by the participants. Participant contribution is the amount that must be paid by insurance participants to the company on a regular basis ³⁴. The contribution funds paid are in the form of savings funds and *tabarru'* funds which will be used to submit claims if one day there is a disaster or loss. Deposited contribution funds will be reduced by several fees before becoming a net contribution ³⁵. In the sharia insurance financial statements, the net contribution is the gross contribution after deducting fees for managers, reinsurance and changes to unentitled contributions. If the net contribution value is high, the solvency level of Islamic companies will also be high. Research by Alifianingrum & Suprayogi (2018) and Hasanah & Kamal (2022) shows that there is a positive and significant effect between net contribution and financial performance. Based on the previous literature, the formulation of the hypothesis in this study is:

H₆: Net contribution has a positive effect on the level of solvency.

Investment growth is a change in the investment of Islamic insurance companies from year to year, so that the decline and increase can be known. If the investment value increases, it means that the company is experiencing growth and will have an impact on increasing the income of the solvency level of the sharia insurance company ³⁶. Hasanah & Kamal (2022) research shows that investment has an effect on the financial performance of Islamic insurance companies. Therefore, the formulation of the hypothesis in this study is:

H₇: Investment growth has a positive effect on the level of solvency.

According to the DSN MUI fatwa No. 21 of 2001, claims are the rights of insurance participants that must be fulfilled by sharia insurance

³⁴ Risma Kartika Mulya Wardhani and Dina Fitriasia Septiarini, "Faktor-Faktor Yang Mempengaruhi Kontribusi Peserta Pada Perusahaan Asuransi Jiwa Syariah Di Indonesia," *Jurnal Ekonomi Syariah Teori Dan Terapan* 4, no. 10 (2017): 802, <https://doi.org/10.20473/vol4iss201710pp802-816>.

³⁵ Rosyda Alifianingrum and Noven Suprayogi, "Faktor-Faktor Yang Mempengaruhi Surplus Underwriting Dana Tabarru' Pada Perusahaan Asuransi Jiwa Syariah," *Jurnal Ekonomi Syariah Teori Dan Terapan* 5, no. 2 (2019): 143, <https://doi.org/10.20473/vol5iss20182pp143-157>.

³⁶ Munawaroh and Mukhibad, "Determinan Yang Mempengaruhi Financial Performance Pada Perusahaan Asuransi Umum Syariah Di Indonesia."

companies. In the event of a claim, the company will compensate for the loss/disaster by using the *tabarru'* funds (social/benevolent funds) that have been collected by the insurance participants. Claim expenses are expenses in insurance companies to fulfill the obligation to pay claims in the current period ³⁷. Hasanah & Kamal (2022) research shows that claims have an influence on the financial performance of Islamic insurance companies.

H₈: Claim Expenses Ratio (RBK) has a negative effect on the level of solvency.

Inflation and changes in interest rates can affect financial performance in the form of profitability and return on investment in Islamic insurance companies. If inflation exceeds the threshold, it will have an impact on the decline in the value of money and claims will tend to move upwards. High inflation will have an impact on high costs that must be incurred and in particular can affect long-term liabilities or the solvency level of Islamic insurance companies in Indonesia ³⁸. Hemrit's research (2020) shows that inflation has an influence on the performance of Islamic insurance companies.

H₉: Inflation has a negative effect on the level of solvency.

Gross Domestic Growth (GDP) is the percentage change in the monetary value of all finished goods and services produced by a country within a certain period of time ³⁹. If the economic growth is good, it will affect the investment generated by Islamic insurance companies. If GDP increases, investment returns will also increase, and vice versa if the value of GDP decreases, investment returns will also decrease ⁴⁰. This

³⁷ Alifianingrum and Suprayogi, "Faktor-Faktor Yang Mempengaruhi Surplus Underwriting Dana Tabarru' Pada Perusahaan Asuransi Jiwa Syariah."

³⁸ Hemrit, "Determinants Driving Takaful and Cooperative Insurance Financial Performance in Saudi Arabia."

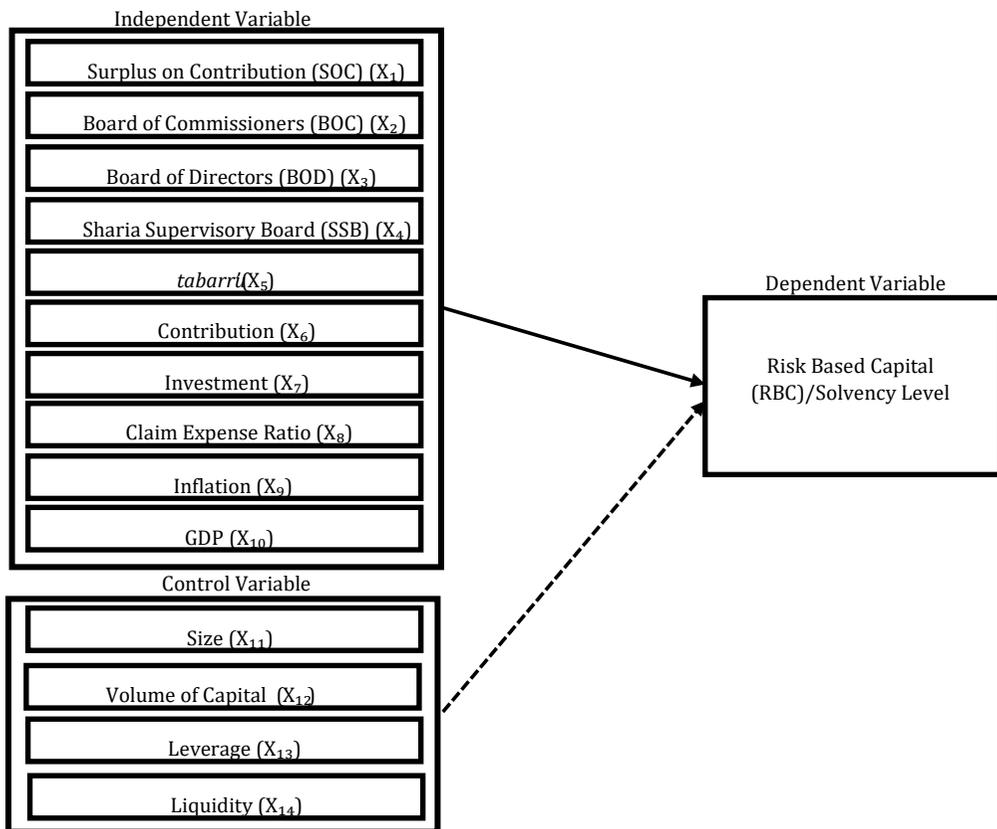
³⁹ Richard Angelous Kotey, Richard Akomatey, and Baah Aye Kusi, "Exploring the Nonlinear Effect of Size on Profitability: Evidence from an Insurance Brokerage Industry in an Emerging Market," *African Journal of Economic and Management Studies* 12, no. 3 (2021): 381-99, <https://doi.org/10.1108/AJEMS-05-2020-0228>.

⁴⁰ R Laida, M Muslikhati, and F Aprilianto, "Analisis Pengaruh Variabel Makroekonomi Terhadap Hasil Investasi Pada Perusahaan Asuransi Syariah Yang Terdaftar Pada Otoritas Jasa Keuangan Periode 2015 ...," *International Journal of ...* 1, no.

result can certainly have an impact on the company's ability to meet its long-term obligations (solvency level). Research by Hasanah & Kamal (2022) and Kantakji, Hamid, & Alhabshi (2020) shows that GDP has an influence on the financial performance of Islamic insurance companies.

H₁₀: GDP has a positive effect on the level of solvency.

Referring to theoretical studies and previous research, the framework of thought in this research is as follows:



Method used in this study is a descriptive study with a quantitative approach. The population used is all sharia insurance companies in Indonesia consisting of sharia general insurance, sharia life insurance, and reinsurance. The sampling technique used purposive sampling technique, with the following criteria:

Table 2 Sample Selection Criteria

No	Sample Criteria	Amount
1	The number of sharia insurance companies registered with the OJK during the 2017-2021 period.	59
2	The number of Islamic insurance companies that do not publish financial statements on the company's official website.	2
3	The number of Islamic insurance companies that do not publish complete financial statements on the company's official website.	14
Total companies according to criteria		43
Total data for the period 2017-2021		215

This study uses secondary data taken from the financial statements of Islamic insurance companies from the company's official website. The data is panel data because it uses time series and cross section data. The data analysis technique used multiple linear regression which was processed using E-Views 12.

Results and Discussion

Panel Data Regression Model Selection

The results of determining the model after the CEM, FEM and REM test approaches are as follows:

Chow test

Table 3 Chow Test Results

Effect Test	Statistics	df	Prob
Cross-Section F	5.416832	-42.158	0.0000

Source: Processed Data, (2022)

Chow test is used to determine which CEM or FEM model will be selected. Based on the test results above, it is known that the probability value of *cross section*F is 0.0000 and less than 0.05, so the FEM model is selected.

Hausman test

Table 4 Hausman Test Results

Test Summary	Chi-Sq. Statistics	Chi-Sq.df	Prob
Cross-Section Random	20.52198	14	0.1150

Source: Processed Data, (2022)

This Hausman test is used to select a model between FEM and REM. From the test results above, it is known that the probability value of a random cross section is 0.11 and is greater than 0.05, so the REM model is selected.

Lagrange Multiplier Test

Table 5 Lagrange Multiplier Test Results

	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	62.18821 (0.00000)	1.356234 (0.2442)	63.54445 (0.00000)

Source: Processed Data, (2022)

The LM test was carried out in selecting the model between REM and CEM. From the test results above, it is known that the Breusch-Pagan cross section value is 0.0000 and less than 0.05, so the model chosen is the REM model. From the three tests above, it can be concluded that the panel regression model chosen to be used in this study is REM.

Classic Assumption Test

Because in this study the selected regression model is REM which uses the Generalized Least Square (GLS) approach, therefore it is not necessary to fulfill the classical assumption test. This is because the GLS technique can overcome the autocorrelation of time series (time series) and the correlation between observations (cross section). This method is able to produce estimators that meet the Best Linear Unbiased Estimation (BLUE) criteria (Hasanah & Kamal, 2022).

a. Panel Data Regression Test

Table 6 REM Regression Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Conclusion
C	-0.632656	0.792754	-0.798048	0.4258	
Independent					
BOC	0.688757	0.276232	2.493403	0.0135	Significant
BOD	-0.060476	0.214910	-0.281401	0.7787	Not significant
SSB	-0.415338	0.233442	-1.779193	0.0767	Not significant
SOC	-0.107611	0.044655	-2.409851	0.0169	Significant
TAB	0.216433	0.045547	4.751847	0.0000	Significant
CONT	-0.229771	0.053170	-4.321441	0.0000	Significant
INV	0.057729	0.018367	3.143118	0.0019	Significant
RBK	-0.100346	0.041174	-2,437113	0.0157	Significant
INF	-0.088265	0.151215	-0.583706	0.5601	Not significant
GDP	-0.014604	0.077498	-0.188439	0.8507	Not significant
Control					
SIZE	-0.011525	0.042705	-0.269873	0.7875	Not significant
VOC	0.285636	0.079647	3.586276	0.0004	Significant
LEV	-0.344360	0.066080	-5,211239	0.0000	Significant
LIQ	0.215704	0.052611	4.099950	0.0001	Significant
R-Squared	0.389540				
Adjusted R-Squared	0.346808				
F-Statistics	9.115847				
Prob(F-Statistic)	0.000000				

Source: Processed Data, (2022)

Based on the results of the FEM regression test above, the panel data regression equation in this study is as follows:

$$RBC = -0.632656 + 0.688757BOC - 0.060476BOD - 0.415338SSB - 0.107611SOC + 0.216433TAB - 0.229771CONT + 0.057729INV - 0.100346RBK - 0.088265INF - 0.014604GDP - 0.011525SIZE + 0.285636VOCs - 0.344360LEV + 0.215704LIQ$$

b. Test Statistics t

Referring to the table 6, it is known that the results of the significance of the variables BOD (Size of the Board of Directors), SBB (DPS), INF (Inflation), GDP and SIZE are greater than 0.05 so that the four variables have no effect on the level of solvency. While the significance value of the BOC variable (Board of Commissioners Size) is 0.01, the SOC variable is 0.01, the Dana *Tabarru'* variable is 0.00, the KONT variable (Contribution) is 0.00, the INV variable (Investment Growth) is 0, 00, the variable RBK (Claim Expense Ratio) is 0.01, the VOC (Volume of Capital) variable is 0.00, the LEV (Leverage) variable is 0.00 and the LIQ (Liquidity) variable is 0.00 less than 0 0.05 so that the nine variables have a significant influence on the level of solvency of Islamic insurance companies in Indonesia.

c. Test Statistics F

From the results of the regression test above, it is known that the results of the F test are 9.115847 with the F-Statistic Probability value of 0.000000 which is smaller than the 0.05 significance level, which means that all independent variables in this study together can affect the solvency level of Islamic insurance companies in Indonesia.

d. Test Adjusted R-Squared

Score *Adjusted R-Squared* is the corrected R-squared value with the standard error value. The adjusted r-squared value in the test results above is 0.346808. This result means that the influence or ability of the independent variable in explaining the level of solvency as the dependent variable is 34.68%. While the remaining 65.32% is influenced by other variables not examined in this study.

Discussion

The Influence of Board of Commissioners Size on Solvency Level

Based on the test results in this study, the size of the Board of Commissioners has a positive effect on the solvency level of Islamic insurance companies in Indonesia. This is in line with the GCG theory which states that a large board size will be better able to process and handle complexities within the company more deeply, so this will affect

performance. The greater the number of commissioners, the higher the company's performance, and the better the level of solvency. This means that the duties and roles of providing advice, suggestions and input to the board of directors and management are very effective to be carried out by the Board of Commissioners.

The Influence of Board of Directors Size on Solvency Level

The results of the Board of Directors Size test in this study have no effect on the solvency level of Islamic insurance companies. The board of directors is in charge of managing all the resources owned by the company. The greater the number of directors, the more diverse knowledge, skills and experience there will be so that it will have an impact on the achievement of the company's goals, namely good performance as measured by the level of solvency. The better the management, the easier it will be for the company to achieve its goals. This result is not in accordance with the GCG theory and stewardship theory. This means that the large number of the board of directors is not necessarily able to provide good performance (including the level of solvency).

The Influence of the Sharia Supervisory Board on the Solvency Level

The size of the SSB in this study has no effect on the solvency level of Islamic insurance companies in Indonesia. The task of the SSB itself is to oversee all company activities so that they are in accordance with sharia principles. These results indicate that the DPS is not trusted by the company so that its supervisory function does not run well. When compared to the Board of Commissioners or the Board of Directors, the number of SSB is very small, if it is seen from the average number of SSB each year only 1 person. This can make all information related to sharia fatwas submitted by DPS not necessarily known by the wider community, especially sharia insurance participants as stakeholders, so that it is not in accordance with stewardship theory, which puts forward moral values so that it can be trusted by stakeholders. The results of this study are in line with Awrasya & Kusumaningtias (2021) which states that the size of the DPS has no effect on the level of solvency.

The Influence of Surplus on Contribution (SOC) on Solvency Level

The results of the SOC test in this study have a negative effect on the solvency level of Islamic insurance companies, inversely proportional to the initial hypothesis that SOC has an influence on the solvency level. This SOC is a tool to assess the performance of sharia insurance as seen from the difference in the total contribution of the participants of the *tabarru'* fund after deducting the burden of insurance claims, reinsurance and technical reserves for a certain period. If the surplus is high, it means that the performance of the insurance company is also high and will have an impact on the high level of company solvency, so that it will also have an impact on the existence of sharia insurance companies in the long term⁴¹If it is assumed by the results of this study, where SOC has a negative effect on the level of solvency, This means that the surplus obtained by the sharia insurance company is not too high, so that in fulfilling its obligations, the company uses other sources of funding, such as own capital or financing from other institutions, this causes that SOC has a negative effect on the level of solvency.

The Effect of Tabarru' Fund on Solvency Level

The *Tabarru'* Fund in this study has a positive effect on the level of solvency. *Tabarru'* funds become a unique resource and differentiate from conventional companies and make sharia insurance companies superior to conventional insurance companies⁴². The *tabarru'* fund is a social fund that will be used to cover the claims of fellow sharia insurance participants, and this result is in line with signaling theory which can be information while reducing information asymmetry for participants and the wider community that sharia insurance companies are able to manage funds properly so that the level of solvency tall. The following is the average *tabarru'* fund to solvency level:

⁴¹ Nurlatifah and Mardian, "Kinerja Keuangan Perusahaan Asuransi Syariah Di Indonesia: Surplus on Contribution."

⁴² Munawaroh and Mukhibad, "Determinan Yang Mempengaruhi Financial Performance Pada Perusahaan Asuransi Umum Syariah Di Indonesia."

Table 7 Average Amount of Funds *tabarru'*

Year	Tabarru Fund	Solvency Level
2017	59,708.01	1619%
2018	62,729.22	988%
2019	67,046.77	902%
2020	61,917.59	1088%
2021	43,661.22	826%

Source: Processed data, (2022)

If we look at the average *tabarru'* fund on the level of solvency in the last 5 years, it has a directly proportional effect. The higher the *tabarru'* fund, the higher the solvency level. Therefore, *tabarru'* funds have a significant positive effect on the level of solvency. This result is in line with research by Devy, Anaqoh, & Fakir (2022) which states that *tabarru'* funds have an influence on financial performance.

The Effect of Contribution on Solvency Level

The contribution has a negative effect on the solvency level of Islamic insurance companies in Indonesia. This result is contrary to the initial hypothesis, where the contribution is thought to have a positive influence on the level of solvency. There is a relationship between contribution and performance. Research by Hasanah & Kamal (2022) states that if the contribution received by a sharia insurance company is large, the *tabarru'* fund will also be large so that its financial performance will increase. However, if the contribution is small when compared to the insurance expense, the performance will also decrease. This negative result could be due to the small contribution received by Islamic insurance companies. When viewed from the average contribution of sharia insurance in the statistical descriptive table for the last 5 years only 10,672 and the highest was only 24,883, even the smallest no contribution funds entered, namely 2017 in Askrida insurance. These results are in line with research Alifianingrum & Suprayogi (2018) and Hasanah & Kamal (2022) which states that there is an influence between contribution and performance.

The Effect of Investment Growth on Solvency Level

Investment growth has a positive influence on the solvency level of Islamic insurance companies. Good investment growth will have an impact on the good performance to be achieved by the company. The results of this study indicate that the profits from investments obtained by Islamic insurance companies tend to be high with a fairly low level of risk so that investment growth has a significant influence on the solvency level of Islamic insurance companies in Indonesia. These results are in line with signaling theory, namely that the company is able to provide information to interested parties that the company's performance is high so that it can affect the high level of solvency which in turn can foster trust from the wider community to buy insurance services in the sharia insurance industry. These results are in line with research by ⁴³, Hasanah & Kamal, (2022), Alifianingrum & Suprayogi (2018) which show that investment has an effect on financial performance.

The Effect of Claim Expenses Ratio on Solvency Level

The test results of the Claim Load Ratio (RBK) variable in this study have a negative influence on the solvency level. This ratio shows the ability of Islamic insurance companies to fulfill their obligations through contributions obtained from insurance participants. The greater this ratio, the more confidence insurance participants have in sharia insurance companies in Indonesia, so that it will be possible to increase the number of new participants who will contribute more to the level of solvency ⁴⁴. The following is a table of average claims expense:

Table 15 Average Amount of RBK

Year	Claim Expense	Solvency Level
2017	19,510.64	1619%
2018	27,573.94	988%
2019	24,655.32	902%
2020	22,809.15	1088%

⁴³ Samiari Ambarwati and Fatin Fadhilah Hasib, "Pengaruh Ukuran Perusahaan, Hasil Investasi, Dan Profitabilitas Terhadap Solvabilitas Asuransi Syariah Di Indonesia Periode 2012-2016," *Jurnal Ekonomi Dan Bisnis Islam (Journal of Islamic Economics and Business)* 4, no. 2 (2018): 91, <https://doi.org/10.20473/jebis.v4i2.9807>.

⁴⁴ Awrasya and Kusumaningtias, "Pengaruh Rasio Early Warning System Dan Good Corporate Governance Terhadap Tingkat Solvabilitas Pada Asuransi Jiwa Syariah."

2021	56,326.75	826%
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Source: Processed data, (2022)

When viewed from the average RBK ratio from 2017-2021, the average claim expense ratio is inversely proportional to the solvency level, so this can support the research results that RBK has a negative effect on the solvency level. This is in accordance with the signal theory, where the ratio of the claim load becomes a signal for the solvency level. The existence of RBK is able to reduce information asymmetry between management and insurance participants because RBK can be information for solvency. These results are in line with research conducted by Alifianingrum & Suprayogi (2018) which states that RBK has an influence on the solvency level of Islamic insurance companies in Indonesia.

The Effect of Inflation Ratio on Solvency Level

Inflation in this study has no effect on the solvency level of Islamic insurance companies in Indonesia. This indicates that high inflation is associated with high uncertainty which can harm participants' endowments and lead to increased consumption of insurance and more risk coverage. The reason why the results are not significant could be because Islamic insurance companies so far have investment strategies that tend to be made on investments that are not too dependent on interest rates for investment returns. The results of this study are in line with research conducted by Hemrit (2020) that inflation has no effect on financial performance.

The Effect of GDP on Solvency Level

The GDP test results in this study have no effect on the solvency level of Islamic insurance companies in Indonesia. This means that the increase in GDP per capita has no impact on the company's investment income and vice versa. Good domestic economic conditions are a source of growth in real sector operations which will create higher demand for sharia insurance products and will ultimately affect performance improvement ⁴⁵. If the performance is high, the solvency level is also high.

⁴⁵ Mazhar Hallak Kantakji, Baharom Abdul Hamid, and Syed Othman Alhabshi, "What Drives the Financial Performance of General Takaful Companies?," *Journal of*

This is the reason why the results in this study GDP have no effect on the level of solvency.

Conclusion

The level of solvency in Islamic insurance companies can describe the company's financial condition and ability to fulfill its obligations, so that the consistency of the level of solvency needs to be maintained in an adequate ratio. The level of solvency is influenced by various factors, both internal and external. Based on the results of hypothesis testing and analysis, it can be concluded that simultaneously GCG consists of BOC, BOD, SSB and SOC, *tabarru'* funds, contributions, investment growth, RBK, inflation and GDP by using size, volume of capital, leverage and liquidity as control variables have a simultaneous influence on the level of solvency. Partially, the results of this study indicate that there is one GCG indicator and 5 financial components that significantly influence the level of solvency. The board of commissioners, *tabarru'* funds and investment growth have a positive effect, while SOC, contribution and RBK have a negative effect on the solvency level of Islamic insurance companies in Indonesia. Meanwhile, BOD, SSB, Inflation and GDP have no effect on the level of solvency.

These results indicate that the level of solvency of Islamic insurance companies in Indonesia are influenced by the board of directors as part of GCG, *tabarru'* funds and investment growth, surplus on construction and claim expense ratio. Islamic insurance companies can pay attention to these factors so that financial health conditions are well maintained in order that cases of default due to low solvency levels will never occur. If the consistency of the solvency level is always in good condition, this can have an impact on the trust of the public in the Islamic insurance companies, so that it will also have an impact on the sustainability of Islamic insurance company in the long term.

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