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The Impact of Income Diversification on Bank Stability in Indonesia: A Comparative Analysis of Conventional and Sharia Banks

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Abstract

Banks play a major role in economic activities worldwide, but until now, there has been no clear consensus on the impact of income diversification on bank stability and its potential to help banks survive during a crisis, especially when relying on interest income. This study aims to determine whether income diversification affects the stability of Islamic and conventional banks in Indonesia during the period 2019–2023. This research uses quantitative data from 10 samples over five years, selected through the purposive sampling method. The study finds that income diversification has a significant positive effect on the stability of Islamic banks but is not significant for the stability of conventional banks. This indicates that income diversification can significantly enhance the stability of Islamic banks, while for conventional banks, it has the potential to improve stability. Overall, income diversification has different impacts on different types of banks. Bank debt has a negative but insignificant effect on the stability of both conventional and Islamic banks, showing a similar effect across bank types. Bank size has a positive but insignificant effect on conventional bank stability, while it has a positive and significant effect on Islamic bank stability, indicating differences in the impact of bank size on different types of banks. This study is a pioneering assessment of the effect of income diversification on the major types of banks in Indonesia (Islamic and conventional) and is expected to be useful for banking management, decision-makers with religious investment considerations, and regulators.

1. Introduction

Bank revenue consists of two categories: primary income derived from loans and savings, and secondary income derived from the provision of services such as collections and safe deposit box services, among others [1]. A bank's primary income mainly comes from providing credit to the public, which typically carries a high level of risk due to non-performing loans. Therefore, credit revenue has the potential to significantly disrupt bank stability [2].

According to portfolio theory, banks with a high level of diversification tend to have lower failure rates and are better able to mitigate existing risks [3]. Consequently, the higher the level of diversification, the more stable the bank will be and the lower the risk of bankruptcy. Therefore, some banks use revenue diversification to reduce risk and increase bank stability [4]. Revenue diversification is often debated by researchers because empirical findings frequently yield mixed results. Some studies find that income diversification has a significant positive impact on bank stability, although cost efficiency

Table 1. Stability and diversification levels of conventional and Islamic banks 2019–2020.

Bank Name	z-Score		HHI	
	2019	2020	2019	2020
BCA	144%	130%	37%	37%
Accumulation		-11%		-2%
BRI	35%	31%	31%	33%
Accumulation		-14%		5%
CIMB	33%	30%	25%	17%
Accumulation		-10%		-45%
BSI	46%	37%	13%	14%
Accumulation		-24%		9%
Bank Aladin	89%	85%	6%	3%
Accumulation		-5%		-110%

Source: Indonesia Stock Exchange (IDX) [5].

is reduced due to diversification [6]. However, income diversification can increase bank profitability, which in turn improves stability [7]. Conversely, research conducted on 53 banks in Africa during the period 2010–2020 shows that income diversification has a significant negative impact on bank performance [8]. Similar results are reported in a study covering 45 countries using data from 2000, which finds that income diversification has a significant negative impact on bank stability [9].

According to the "too big to fail" theory, larger banks tend to be more stable because they benefit from public trust and government protection [10]. This finding aligns with Khattak et al. [11], who report that large banks achieve higher cost efficiency when using revenue diversification, thereby increasing stability, whereas small banks experience the opposite effect. On the other hand, risk transfer theory suggests that debt can increase bank stability by improving profitability. If a bank is unable to meet its obligations, the risk of default can be transferred to capital owners or stakeholders, thereby reducing the immediate threat to the bank [12, 13]. This perspective contrasts with portfolio theory, which emphasizes revenue diversification as a strategy to mitigate risk and maintain financial stability [14]. Several studies indicate that the impact of debt is not fully consistent with risk transfer theory. For example, Fresno & Hanggraeni [15] finds that banks pursuing higher performance tend to require high liquidity and thus rely heavily on debt to improve operations. However, in the event of default, risk increases, and debt may also generate additional costs arising from interest rate differences between lenders and banks, as well as interest expenses, which can reduce cost efficiency and ultimately weaken bank stability. Another explanation supporting the negative impact of loans is provided by Paltrinieri et al. [16], who find that banks with lower leverage tend to perform better because banks with lower loan levels are generally more independent and financially more stable.

Based on data processed from the Indonesia Stock Exchange (IDX), the influence of income diversification on bank stability is not only a theoretical concern but also an observable phenomenon in Indonesia. The impact of income diversification on bank stability shows divergent results between Islamic and conventional banks. Previous studies, such as Boyd & Runkle [17], commonly use the Z-score as a measure of financial stability, as it is considered one of the most comprehensive indicators for predicting bankruptcy by incorporating returns, standard deviation, and other factors. In interpreting Z-score results, higher and positive values indicate greater financial stability, while lower or negative values indicate lower levels of stability. Meanwhile, the Herfindahl–Hirschman Index is widely used to measure income diversification, as it reflects the degree to which banks rely on interest versus non-interest income. Higher Herfindahl–Hirschman values indicate a higher level of income diversification [18].

In this study, the observation period covers 2019 to 2023 and is divided into two phases: the pre-COVID-19 period and the COVID-19 period. Based on the Indonesian government's official announcement in Presidential Decree (Keppres) No. 12 of 2023, Indonesia experienced the COVID-19 period from 2 March 2021 to 21 June 2023, while the pre-COVID-19 period refers to the years before 2021, namely 2019 and 2020. Based on Table 1, the data reveal deviations in the impact of income diversification on bank stability between conventional and Islamic banks. For instance, Bank BCA, which exhibits the second-highest level of income diversification at 37% (Herfindahl–Hirschman Index), also shows the highest level of bank stability (z-score) at 130% (or 1.3), suggesting that higher income diversification is associated with greater bank stability. In contrast, Bank BSI, which has the highest level of income diversification accumulation at 49% (Herfindahl–Hirschman Index), demonstrates the lowest bank stability (z-score) accumulation at 0.24 (or 24%) compared to other banks.

This phenomenon indicates the need for further research on the influence of income diversification on bank stability across different types of banks—Islamic versus conventional—as well as the role of bank size and debt. This study focuses on the period from 2019 (before the onset of COVID-19 in Indonesia) to 2023 (during and after the COVID-19 period) to analyze how income diversification influences bank stability during the pandemic. The Indonesian Minister of Finance has stated that the COVID-19 pandemic affected various aspects of life in Indonesia, including economic, social, and health sectors [19]. According to Statistics Indonesia (BPS) [20], in 2020, when the pandemic entered Indonesia, the unemployment rate increased by 1.89%, representing an additional 2.67 million unemployed individuals. Meanwhile, Indonesia's GDP in 2020 declined by 2.07% year-on-year compared to a growth rate of 5.02% in 2019. Given these phenomena, further research on income diversification and bank stability is necessary. Accordingly, this study aims to analyze the influence of income diversification, bank size, and bank debt as control variables on bank stability in both conventional and Islamic banks, as well as to compare the effects of these explanatory variables across different types of banks.

2. Materials and Methods

2.1. Data

This study focuses on the banking sector, as the research subjects are conventional and Islamic banks in Indonesia. The banks included in the sample are those listed on the Indonesia Stock Exchange (IDX) [5] over the period 2019–2023, with particular emphasis on the COVID-19 period. The study employs a quantitative research design, as bank stability is measured numerically using the Z-score. The Z-score parameter was developed by Edward Altman. According to Altman, the Z-score is one of the most appropriate measures of financial stability, as it predicts corporate bankruptcy by considering overall financial conditions. Moreover, the Z-score remains valid even when the return series is not normally distributed, as long as returns and standard deviations are included in the calculation [17].

Regarding the data, this study includes 10 banks as research samples, consisting of 4 Islamic banks and 6 conventional banks, yielding a total of 50 observations over the study period. The sample consists of banks listed on the Indonesia Stock Exchange (IDX), namely Bank Central Asia Tbk, Bank Rakyat Indonesia Tbk (BBRI), Bank Mandiri (Persero) Tbk (BMRI), Bank Negara Indonesia (Persero) Tbk (BBNI), Bank Danamon Tbk, Bank CIMB Niaga Tbk, Bank Aladin Syariah Tbk, Bank Syariah Indonesia Tbk (BRIS), Bank BTPN Syariah Tbk (BTPS), and Bank Panin Dubai Syariah Tbk (PNBS). The selection criteria are based on the availability of complete annual data for the period 2019–2023, as well as the inclusion of national banks with relatively large asset sizes, defined as having total assets (in natural logarithms) greater than 15.

2.2. Variable Definition

Income diversification is a measure used to determine the extent to which a bank's income is distributed across sources beyond its core income. To measure income diversification, this study uses the Herfindahl–Hirschman Index (HHI). The HHI applied is a modified version specifically designed to capture banking diversification, as proposed by Stiroh [21], in which a smaller HHI value indicates a higher level of diversification. Previous studies show that income diversification has a significant positive effect on bank stability, as it increases profitability and reduces the risk of non-performing loans, thereby lowering the likelihood of bankruptcy [4]. However, for Islamic banks in GMM countries, diversification has been found to have a negative but insignificant effect on bank stability due to its adverse impact on profitability [16]. Income diversification has also been shown to have a stronger positive effect on the stability of conventional banks than Islamic banks in Indonesia, consistent with findings for banks in GMM countries [16]. In this study, income diversification is represented by the variable IDIV and is treated as an independent variable. The first hypothesis posits that income diversification has a positive impact on bank stability.

Regarding control variables, this study includes bank debt and bank size to more accurately capture the effect of the main independent variable. Bank debt is included as a control variable because higher levels of income diversification may be associated with higher costs and greater reliance on debt financing [22]. Bank size is included because larger banks generally have more diversified income streams and rely less on their primary income sources, thereby reducing risk [23]. Bank debt refers to obligations arising from loans obtained to meet a bank's financial needs and reflects the extent to which a bank depends on debt to finance its operations. Higher levels of bank debt are expected to disrupt bank stability [24]; thus, bank debt is hypothesized to have a negative effect on bank stability. The second hypothesis states that bank debt has a negative impact on bank stability.

Bank size is measured as a ratio reflecting the total assets owned by a bank and is used to classify banks as large or small relative to others. Bank size is considered to influence stability because larger banks generally exhibit

Table 2. Descriptive statistics.

Variable	Obs.	Mean	Std. dev.	Min.	Max.
BANKTYPE	50	0.4	4,948,717	0	1
HHI	50	2,737,732	10,055	296,774	3,992,955
LEV	50	7,886,982	1,931,243	0	9,638,331
SIZEBANK	50	6.12E+08	5.82E+08	715623	1.84E+09
STAB	50	3,788,825	3,670,648	-5,292	1,437,942
bank_id	50	5.5	2,901,442	1	10
lnsizebank	50	1,935,204	1,914,875	1,348,091	2,133,045
L_STAB	40	3,850,155	3,714,032	-5,292	1,437,942
HHI_Sharia	50	701,939	1,065,583	0	3,800,756
LEV_Sharia	50	2,982,791	4,032,363	0	9,638,331
Lnsize_Sha~a	50	7,125,319	8,907,889	0	1,968,374

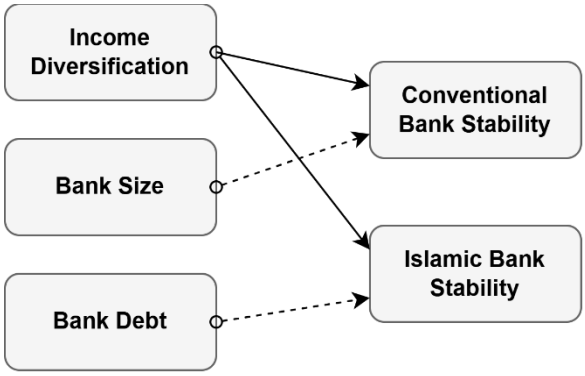

Figure 1. Conceptual framework of the study.

higher survival rates. As banks grow larger, customer trust tends to increase, improving the bank's ability to market its products and enhancing overall stability [7]. Banks with larger asset bases are also better able to meet debt obligations and typically have stronger capital positions, making them more competitive than smaller banks. Prior studies find that larger banks tend to be more stable, as higher asset levels reduce the risk of bankruptcy [16]. Moreover, previous research finds no significant difference in the effect of bank debt on the stability of Islamic and conventional banks. In this study, bank size is represented by the variable SIZE and is used as a control variable to provide clearer insight into the relationship between the independent and dependent variables.

2.3. Conceptual Framework

Based on the conceptual framework shown in Figure 1, the hypotheses of this study are formulated as follows:

H_1: Income diversification has a positive and significant effect on the stability of conventional banks.
H_2: Diversification of income has a significant negative effect on the stability of Islamic banks.
H_3: There are differences in the impact of income diversification on the stability of conventional banks and Islamic banks.
H_4: Bank debt has a significant negative effect on the stability of Islamic banks.
H_5: Bank debt has a significant negative effect on the stability of conventional banks.
H_6: There is no difference in the impact of bank debt on the stability of conventional and Islamic banks.
H_7: Bank size has a significant positive effect on the stability of conventional banks.
H_8: Bank size has a significant positive effect on the stability of Islamic banks.
H_9: There is no difference in the impact of bank size on the stability of conventional and Islamic banks.

2.4. Research Method

This study employs a quantitative research method using an econometric approach. The estimation technique applied is the Generalized Method of Moments (GMM), originally introduced by Hansen [25] and further developed for panel data analysis by Arellano & Bond [6] and Blundell & Bond [3], specifically in the form of the system GMM estimator. GMM is selected because it effectively addresses endogeneity issues and violations of classical assumptions, such as heteroskedasticity and multicollinearity. Moreover, GMM is more appropriate and consistent for the panel data structure used in this study than fixed-effects or random-effects models, as the dataset comprises a short time dimension (five years) and a relatively large cross-sectional dimension (N).

The system GMM approach is employed because the panel data are dynamic, meaning that current bank stability is strongly influenced by past stability, and because several variables exhibit limited time variation, such as bank size. When strong correlations exist between the lagged dependent variable and the error term, the system GMM estimator is considered the most suitable approach. The empirical model used in this study is specified in Equation 1.

$$STAB_{it} = \alpha + \beta_1 STAB(-1)_{it} + \beta_2 HHI_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 BANKTYPE_{it} + \varepsilon_{it} \quad (1)$$

In this specification, *STAB* represents bank stability, *HHI* represents the income diversification variable, *LEV*

Table 3. GMM assumption test output results for the combined model.

Test	z-Stat. / chi²	Prob.
Arellano-Bond test for AR(1) in first differences	1.86	0.063
Arellano-Bond test for AR(2) in first differences	1.11	0.266
Hansen	6.15	0.631

Note: A probability value greater than 0.05 indicates that the assumption is satisfied.

Table 4. GMM assumption test output results for the conventional bank model.

Test	z-Stat. / chi²	Prob.
Arellano-Bond test for AR(1) in first differences	-0.58	0.561
Arellano-Bond test for AR(2) in first differences	0.65	0.517
Hansen	0.00	1.000

Note: A probability value greater than 0.05 indicates that the assumption is satisfied.

Table 5. GMM assumption test output results for the Islamic bank model.

Test	z-Stat. / chi²	Prob.
Arellano-Bond test for AR(1) in first differences	1.68	0.093
Arellano-Bond test for AR(2) in first differences	1.51	0.130
Hansen	0.00	1.000

Note: A probability value greater than 0.05 indicates that the assumption is satisfied.

denotes bank leverage, *SIZE* refers to bank size, and *BANKTYPE* is an interaction variable used to capture differences between Islamic and conventional banks.

3. Results and Discussion

3.1. Descriptive Statistics

As shown in Table 2, from a theoretical perspective, the high dispersion in SIZEBANK and HHI suggests a dualistic market structure in which a few large players may exert significant market power, potentially supporting the Market Power Hypothesis (Structure–Conduct–Performance). However, the presence of negative minimum values in STAB indicates that despite high average stability, some institutions remain vulnerable to shocks, highlighting the importance of the fragility-versus-competition debate in the banking literature. Furthermore, the discrepancy between LEV (mean = 7.8M) and LEV_Sharia (mean = 2.9M) is particularly interesting, as it suggests that Sharia-compliant entities may operate under more conservative capital constraints or different risk-sharing frameworks compared to their conventional counterparts. This lower leverage profile in the Sharia segment could be interpreted as a buffer against systemic risk, although it may also reflect limitations in capital market access or different asset–liability management strategies inherent in Islamic finance.

3.2. Assumption Test

3.2.1. Islamic and Conventional Banks Combined

Based on the results in Table 3, the AR(1) test yields a p value of 0.063, which exceeds the 0.05 significance level and is considered acceptable due to residual correlation commonly observed in GMM estimation. The AR(2) test reports a p value of 0.266, which is also above 0.05, indicating the absence of second order autocorrelation that would violate GMM assumptions. These results confirm that the model satisfies the autocorrelation assumption.

The Hansen test produces a p value of 0.631, exceeding the 0.05 threshold, suggesting that the instruments are valid and that there is no heteroscedasticity problem violating GMM assumptions. Therefore, the model passes the heteroscedasticity assumption and the estimation results are valid.

3.2.2. Conventional Bank

For the conventional bank model, as shown in Table 4, the AR(1) test yields a p-value of 0.561, which is above 0.05 and indicates normal residual behavior within the GMM framework. The AR(2) test yields a p value of 0.517, confirming the absence of autocorrelation that would invalidate the model. Thus, the autocorrelation assumption is satisfied.

The Hansen test reports a p value of 1.00, which exceeds the 0.05 significance level, indicating no evidence of heteroscedasticity or instrument invalidity. Accordingly, the model meets the heteroscedasticity assumption and the results are considered reliable.

3.2.3. Islamic Banks

In the Islamic bank model, based on the results in Table 5, the AR(1) test produces a p-value of 0.093, which is above the 0.05 threshold and is acceptable in GMM estimation. The AR(2) test yields a p value of 0.130, indicating no autocorrelation that would violate GMM

Table 6. GMM results for hypothesis testing in the combined model.

Variable	Coef.	Robust Std. Er.	z-Stat.	Prob.
L.STAB	0.414	0.226	1.830	0.067
LEV	-0.784***	0.279	-2.810	0.005
HHI	0.616	0.336	1.840	0.066
SIZEBANK	2.21e-10**	1.09e-10	2.020	0.043
BANKTYPE	0.097	0.130	0.750	0.453
Constant	0.475	0.345	1.380	0.169

Note: *** and ** indicate significance at the 1% and 5% levels, respectively.

Table 7. GMM results for hypothesis testing in the conventional bank model.

Variable	Coef.	Robust Std. Er.	z-Stat.	Prob.
L.STAB	0.981***	0.031	31.35	0.000
LEV	-0.165	0.545	-0.300	0.762
HHI	-0.098	0.290	-0.340	0.737
SIZEBANK	1.87e-11	2.14e-11	0.870	0.382
Constant	0.154	0.516	0.300	0.766

Note: *** indicates significance at the 1% level.

Table 8. GMM results for hypothesis testing in the Islamic bank model.

Variable	Coef.	Robust Std. Er.	z-Stat.	Prob.
L.STAB	0.458***	0.099	4.620	0.000
LEV	-0.490	0.363	-1.350	0.177
HHI	-0.879***	0.173	-5.090	0.000
SIZEBANK	3.13e-10	6.70e-10	0.470	0.641
Constant	0.275	0.218	1.230	0.207

Note: *** indicates significance at the 1% level.

assumptions. Therefore, the autocorrelation assumption is fulfilled.

The Hansen test results in a p value of 1.00, exceeding the 0.05 level, which suggests that the instruments are valid and that heteroscedasticity does not pose a concern. Consequently, the model satisfies the heteroscedasticity assumption and the estimation results are valid.

3.3. Hypothesis Testing

3.3.1. Islamic and Conventional Banks Combined

The GMM results in Table 6 show that the model passes the overall feasibility test, as indicated by a Wald chi-square value of 115.58 with a p-value of 0.00, confirming joint significance. The HHI coefficient of 0.616 with a p value of 0.066 (p value > 0.05) indicates that income diversification has no statistically significant effect on bank stability in the combined bank sample, although the positive coefficient suggests that a 1 percent increase in income diversification is associated with a 0.61 percent increase in bank stability.

The coefficient for leverage (LEV) is −0.78 with a p value of 0.006 (p value < 0.05), indicating that bank debt has a significant negative effect on bank stability. Specifically, a 1 percent increase in leverage is associated with a 0.78 percent decrease in bank stability.

Bank size (SIZE) shows a coefficient of 2.21 with a p value of 0.004 (p value < 0.05), suggesting that size has a significant positive effect on stability. A 1 percent increase in bank size is associated with a 2.21 percent increase in bank stability.

3.3.2. Conventional Banks

The GMM results in Table 7 for the conventional bank model show that the model passes the overall feasibility test, with a Wald chi-square value of 963,913.02 and a p-value of 0.00, indicating strong joint significance. The main explanatory and control variables do not have a statistically significant effect on bank stability, as their p values exceed the 0.05 significance level.

However, the lagged bank stability variable exhibits a strong positive and significant effect, with a coefficient of 0.98 and a p value of 0.00 (p value < 0.05). This result indicates that current stability in conventional banks is strongly influenced by stability in the previous period.

3.3.3. Islamic Banks

The GMM results in Table 8 for the Islamic bank model also show that the model passes the overall fit test, as reflected by a Wald chi-square value of 227.27 with a p-value of 0.00, confirming overall significance. The HHI coefficient of 0.8789 with a p value of 0.00 (p value < 0.05) indicates that income diversification has a significant positive effect on Islamic bank stability. A 1 percent

increase in income diversification is associated with an approximately 0.88 percent increase in stability.

Leverage (LEV) has a coefficient of −0.48 with a p value of 0.177 (p value > 0.05), suggesting a negative but statistically insignificant effect of bank debt on Islamic bank stability. Similarly, bank size (SIZE) shows a coefficient of 3.13 with a p value of 0.641 (p value > 0.05), indicating that size does not have a significant effect on stability in Islamic banks.

The lagged stability variable (L.STAB) has a significant positive coefficient of 0.45 with a p value of 0.00 (p value < 0.05), implying that Islamic bank stability is strongly influenced by its level in the previous period.

3.4. Discussion

3.4.1. The Effect of Income Diversification on Bank Stability

Income diversification refers to a strategy of distributing revenue sources to reduce the risk of investment or business failure. This variable captures the extent to which banks generate income beyond their core operational activities. According to Portfolio Theory proposed by Markowitz, higher diversification reduces risk exposure and enhances stability by lowering the probability of failure [26]. Accordingly, greater income diversification is expected to improve bank stability by mitigating bankruptcy risk.

During the COVID period, the combined sample of Islamic and conventional banks shows an HHI coefficient of 0.61 with a p value of 0.065, which exceeds the 0.05 significance level. This result suggests a positive but statistically insignificant effect of income diversification on bank stability. Nevertheless, the positive direction is consistent with Portfolio Theory and prior studies indicating that income diversification enhances profitability and reduces bankruptcy risk [9, 27].

In the Islamic bank model, the HHI coefficient is 0.87 with a p value of 0.00, indicating a significant positive effect of income diversification on bank stability. Thus, Hypothesis 2, which posits that income diversification significantly improves Islamic bank stability, is accepted. In contrast, for conventional banks, Hypothesis 1 is rejected. The coefficient for income diversification is positive at 0.09 but statistically insignificant, with a p value of 0.84. This finding implies that while income diversification may contribute positively to stability in conventional banks, its effect is not yet substantial. This outcome may reflect the relatively low average HHI value of 0.37 in conventional banks, indicating room for further diversification.

Overall, the findings reveal differences in the impact of income diversification across bank types. Income diversification plays a stronger and statistically significant role in enhancing stability in Islamic banks compared to conventional banks, supporting the hypothesis of heterogeneity in diversification effects across banking systems.

3.4.2. The Effect of Bank Debt on Bank Stability

Bank debt represents interest bearing liabilities used to finance bank operations and reflects the degree of reliance on external funding [27]. According to Risk Transfer Theory, debt may enhance bank stability by transferring risk to stakeholders and improving productivity [28]. However, empirical evidence from this study provides mixed support for this argument.

In the combined model of Islamic and conventional banks, leverage exhibits a coefficient of −0.78 with a p value of 0.005, indicating a significant negative effect on bank stability. This finding aligns with prior research suggesting that excessive debt increases the cost of capital, reduces profitability, and weakens bank performance, thereby undermining stability [7].

When banks are analyzed separately, leverage shows a negative but statistically insignificant effect in both conventional banks, with a coefficient of −0.16 and a p value of 0.76, and Islamic banks, with a coefficient of −0.49 and a p value of 0.17. These results imply that bank debt does not play a decisive role in determining stability at the individual bank type level. One possible explanation is that both bank types maintain debt to asset ratios below unity, indicating that assets remain sufficient to cover liabilities.

Consequently, Hypotheses 3 and 4, which propose a significant negative effect of debt on the stability of conventional and Islamic banks, are rejected. Moreover, the absence of differences in leverage effects across bank types suggests that debt influences stability similarly in both systems. Overall, these findings do not support Risk Transfer Theory, which predicts a positive role of debt in enhancing bank stability.

3.4.3. The Effect of Bank Size on Bank Stability

Bank size, measured by total assets, reflects the scale of bank operations. The too big to fail theory argues that larger banks benefit from greater public trust and implicit government support, which enhance stability [29]. In the combined sample, bank size exhibits a positive and statistically significant effect on stability, with a coefficient of 0.61 and a p value of 0.006. This result supports the too big to fail argument and is consistent with previous

evidence showing that larger banks tend to achieve higher profitability and cost efficiency, thereby improving stability [16].

However, when Islamic and conventional banks are examined separately, bank size has a positive but statistically insignificant effect on stability. The coefficient is 1.87 with a p value of 0.384 for conventional banks and 3.13 with a p value of 0.641 for Islamic banks. These findings suggest that bank size alone does not substantially influence stability within each banking system. This divergence from the too big to fail theory may be explained by differences in capital structures and by the limited variation in bank size across the sample [30]. Descriptive statistics indicate a relatively narrow size range, reducing the explanatory power of size effects.

As a result, Hypotheses 5 and 6, which posit a significant positive effect of bank size on the stability of conventional and Islamic banks, are rejected. Furthermore, the results indicate no meaningful difference in the impact of bank size on stability between Islamic and conventional banks, supporting the conclusion that size does not differentially affect stability across bank types in this context.

4. Conclusions, Implications and Limitations

The GMM results reveal several findings for each variable. Revenue diversification has a positive but statistically insignificant effect on the stability of conventional banks, whereas it has a positive and statistically significant effect on the stability of Islamic banks. Bank debt exhibits a negative but insignificant effect on the stability of both conventional and Islamic banks. Bank size has a positive but insignificant effect on the stability of conventional banks, while it has a positive and significant effect on the stability of Islamic banks.

Based on the findings for conventional banks, income diversification does not yet exert a statistically significant effect on stability. However, the positive coefficient suggests potential for diversification to enhance stability if further expanded, indicating the need for improved diversification strategies. With respect to bank size and leverage, conventional banks are advised to place greater emphasis on reducing debt levels to mitigate bankruptcy risk and to strengthen equity based financing strategies in order to enhance stability. For Islamic banks, income diversification has a significant positive effect on stability, indicating that further expansion of diversified income sources can effectively strengthen bank resilience. In terms of bank size and leverage, Islamic banks should similarly focus on prudent debt management and the optimization of equity usage to improve stability and cost efficiency. Overall, the results indicate no substantial difference in stability between Islamic and conventional banks. The combined bank stability value of approximately 30 percent suggests that investment in the banking sector entails a relatively low risk of failure. Therefore, both Islamic and conventional banks demonstrate favorable potential for generating profits.

Based on the findings of this research, investing in the banking sector in Indonesia appears to be a sound decision, as Indonesian banks exhibit good stability, whether Islamic or conventional. For Muslims who avoid *riba* (interest), Islamic banks can be chosen for saving and investment purposes because Islamic bank performance is not significantly different from that of conventional banks, and Islamic banks are found to be as healthy as conventional banks. In addition, Muslim investors may prefer banks with higher income diversification to reduce investment risk, as Islamic banks with higher income diversification also demonstrate higher stability.

Regarding the limitation of the study, the analysis is confined to a five year observation period, which may restrict the robustness of the empirical findings. Future research is therefore encouraged to adopt a longer time horizon and incorporate a broader set of variables in order to produce more comprehensive and precise evidence and to minimize potential estimation bias.

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