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The impact of funding risk on the stability of Islamic rural banks in Indonesia

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ABSTRACT

This paper investigates the effect of funding risk, along with some control variables, including bank-specific and macroeconomic variables, on the stability of Islamic rural banks (IRBs) in Indonesia. Dynamic panel regression is applied. A two-step GMM is employed to quarterly data from 83 IRBs on Java Island from 2017 to 2021, utilizing unbalanced panel data. In addition, our study was split between large and small IRBs. The results suggest that funding risk positively affects stability, but it is more pronounced for small IRBs than for large IRBs. Banks with strong fundamentals, such as high assets, CAR, and efficiency, encourage bank stability, but high non-performing financings lower bank stability. Economic upturns also enhance bank stability. Policy implications include strengthening depositor confidence through product innovation and raising capital adequacy to enhance stability. First, IRBs should raise capital and mobilize public funds to strengthen stability. Second, IRBs should increase cost efficiency and manage their financing risk well to boost stability.

Introduction

One of the interesting businesses to study after the crisis is the banking sector. The global financial crisis of 2007 has caused a crisis for both conventional and Islamic banking. During the crisis, the soundness of banking sectors experienced a significant decline, and the profitability of Islamic banking was much smaller than that of conventional banking across the world, namely 8.3% and 34.1%, respectively (Othman et al., 2023).After the 2007 crisis, banking sectors experienced another crisis during the COVID-19 pandemic.

The phenomenon of the global financial crisis and the large number of banks experiencing bankruptcy has resulted in the management of risk-taking behavior to maintain bank stability (Widarjono, et al., 2022). Adusei (2015a) explains that the bank's business model is related to how the bank generates profits, customer service, and the fund distribution channels used. One area that requires risk-taking behavior is the bank's funding structure. Islamic banks certainly have a different risk model from conventional banks.

The business model of Islamic banks certainly does not use interest rates but instead uses the principles of profit and loss sharing (PLS) and debt financing (non-PLS). The PLS scheme is a real economic transaction involving tangible assets. PLS-based products use joint-based contracts, which require effective risk management due to the complexity faced and higher monitoring costs. The PLS scheme not only creates risk exposure for Islamic banks, but also exposes depositors to risk arising from the PLS scheme (Risfandy et al., 2020). This business model makes Islamic banks vulnerable to overall risks, both in terms of assets and funding structures, which affect the mobilization of third-party funds due to the withdrawal of funds caused by falling yields. This condition will, of course, continuously influence the bank's sources of equity funds.

In the banking context, funding risk is different from funding liquidity risk. Funding liquidity risk is the ability to settle obligations immediately (Smaoui et al., 2020). Meanwhile, the funding risk is the probability that the deposit mobilization strategy will fail or the probability that depositors will

withdraw their savings, resulting in a decrease in bank deposits, which will have a domino effect on equity funding sources.

Banks' dependence, in particular, on short-term funding structures aimed at increasing excessive bank assets, resulting in uncontrolled mobilization of funds, has been highlighted as a factor in influencing bank systemic risk (Huynh, 2024). Banks with more stable funding structures and fund mobilization strategies tend to have less vulnerability to bankruptcy and be more stable. The result of a study conducted by Dahir et al. (2019) suggests that banks that have a more stable funding structure tend to continue to provide loans and are less likely to fail, so that bank stability is maintained.

A strand of empirical studies has analyzed the stability of Islamic banking in the global market. The stability of Islamic banks persistently depends on market competition, bank fundamentals, and macroeconomic conditions. Fierce competition has reduced the stability of Islamic banks (Khattak et al., 2022). Size increases the stability of Islamic banks (Risfandy et al., 2022). Good economic conditions also support the stability of Islamic banks (Louhichi et al., 2020). Several studies have also analyzed the stability of Islamic banks in Indonesia. Assets and CAR have a positive effect on the stability of Islamic commercial banks (Widarjono, 2020). Assets and liquidity risk have a positive effect on stability, but total financing and non-performing financing (NPF) reduce stability (Iqbal et al., 2021).

Several studies have examined Islamic rural banks in Indonesia. Trinugroho et al. (2018) explored the influence of competition and financing diversification on the margins of Islamic Rural banks (IRBs). Widarjono et al. (2022) examined the influence of competition and bank-specific variables on the stability of IRBs. Risfandy and Pratiwi (2022) investigated the diversification of income to IRBs' profits during COVID-19. Lubis et al. (2023) analyzed the fundamental influence of banks on IRBs' profitability during COVID-19. Hidayah and Karimah, (2023) examined the influence of the type of financing on the profits of IRBs. Jusuf and Widarjono, (2024) explored the effect of funding liquidity risk on the profitability of IRBs.

However, according to Adusei (2015b), risk is also an important factor in influencing bank stability, especially in rural banks. Funding risk is the bank's ability to mobilize funds from the public. If the bank cannot mobilize funds properly, resulting in a high funding risk, its ability to channel funds will decrease, which in turn reduces bank profits and stability. However, to date, there are no previous empirical studies that include the funding risk in influencing the stability of IRBs in Indonesia.

Our research analyzes the influence of funding risk, along with several control variables, on the stability of IRBs. IRB is an Islamic financial institution that serves Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. MSMEs are the largest part of the business sector in Indonesia. Our study selected IRBS, which is located on the island of Java. There are two essential reasons for selecting IRBs on the island of Java. Firstly, Java represents the Indonesian economy because most of the economic activity is on the island of Java. Second, the number of IRBs on the island of Java is 100, accounting for 60% of the number of IRBs in Indonesia.

This study contributes to the literature in three ways. First, it is the first to integrate funding risk into the analysis of IRB stability, extending prior work on Islamic banking that has focused mainly on liquidity or credit risk. Second, it contributes theoretically by linking depositor risk to institutional stability, offering insights into how risk-sharing principles in Islamic finance shape resilience. Third, it contributes to policy debates by comparing small and large IRBs, providing evidence relevant to financial inclusion and regulatory support for Islamic rural banks.

Literature Review

Bank Stability

In the context of banking risk, stability risk refers to the capacity of a bank to absorb instability, where capital functions as a buffer. Banks that have sufficient capital are believed to have a lower risk of bankruptcy. A sufficient amount of equity, measured by the ratio of equity to total assets, allows a bank to absorb shocks that are likely to occur so that it is considered more able to withstand the risks of its business activities. One of the measurements widely used to measure bank stability is the Z-score. The Z-score is a measure that connects a bank's capitalization level with its profitability and risk (Anning, 2018). Bank stability is influenced by the bank's internal and external conditions (Risfandy et al., 2022;Widarjono et al., 2022; Mateev et al., 2022). Bank internal conditions include funding risk, bank

size, capital adequacy, financing, efficiency, and financing risk. Meanwhile, external conditions are macroeconomic conditions as measured by gross domestic product.

Hypothesis

Funding risk measures the bank's ability to mobilize funds from customers. Funding risk (Z-scoref) is one of the risks that must be mitigated and paid attention to because retail-oriented banks finance their activities from third-party funds. Emphasis on funding risk has an impact on bank stability and has a positive domino effect on bank performance. According to Adusei (2015b), the higher the Z-score, the more stable the bank. Therefore, funding risk control, as represented by the Z-scoref, is expected to have a positive impact on bank stability.
H1: Z-scoref has a positive influence on bank stability

Bank performance tends to be sensitive to bank size, which is mostly measured using total assets. Banks that have larger assets can disburse financing to more borrowers. Concentration stability states that large banks in the concentrated banking sector reduce financial fragility by increasing the assets they own for greater market expansion (Ibrahim et al., 2017). Therefore, increasing bank capital is expected to have a positive impact on bank stability.
H_2: Assets positively affect bank stability

Bank capital serves as a reserve to cover the risk of losses that the bank may face. The higher the capital adequacy ratio (CAR), the greater the bank's ability to bear the risk of any risky financing and productive assets. If the capital adequacy ratio is high, the bank can finance operational activities and provide more financing to customers (Widarjono & Mardhiyah, 2022). Therefore, CAR has a positive effect on bank stability.
H_3: CAR positively influences bank stability

Third-party funds channeled in the form of financing will have an impact on bank liquidity and the determination of the bank's funding structure. The Financing Deposit Ratio (FDR) is commonly used to measure financing. Banks with high ratios certainly have problems with their liquidity and tend to be unstable. However, if this ratio is too low, it means the bank is unable to manage its funds well (Nugroho et al, 2022).
H_4: Financing negatively affects bank stability

The bank's efficiency in carrying out its business activities is commonly measured by the Cost Income Ratio (CIR) (Syakhrun et al., 2019). The higher the value of this ratio, the more inefficient the bank is (Putri et al., 2022; Syakhrun et al., 2019; Yusuf, 2017). Banks that carry out their activities efficiently tend to be able to maximize profits and increase the value of bank assets. This encourages banks to be more efficient to increase their stability. Therefore, the income ratio has a negative effect on the bank's stability.
H_5: CIR has a negative impact on bank stability

In running its business, Islamic banking faces the risk of financing known as the Non-Performing Financing (NPF). A high non-performing financing will have an impact on bank performance. A high NPF will, of course, reduce bank capital adequacy and increase costs in handling it (Kasri & Azzahra, 2020). Therefore, NPF has a negative effect on bank stability.
H_6: NPF negatively influences bank stability

Maintaining bank stability is, of course, not only influenced by internal factors. However, external factors such as external risk exposure also influence bank stability. GDP growth is directly proportional to the demand for financing by debtors. High financing drives profits and stability (de Leon, 2020).
H_7: Gross Domestic Product positively affects bank stability.

Research Methods

Data

This research analyzes the stability of IRBs on the island of Java. The research period is from 2017 to 2021, using quarterly data. The final data for this research is unbalanced panel data with a total of 1631 observations. The financial data for each IRB was obtained from the Indonesian Financial Services Authority or Otoritas Jasa Keuangan (OJK), while the Gross Regional Domestic Product (GRDP) data was sourced from the Central Bureau of Statistics or Badan Pusat Statistik (BPS).

Empirical Model

This research is quantitative research using panel data regression analysis methods. The panel data regression used is a dynamic panel regression. The dynamic panel regression was chosen because bank stability is permanent over time. A dynamic panel that includes a time element in the form of bank stability in the previous period as an independent variable can better capture the current behavior of bank stability (Ibrahim et al., 2017; Mateev et al., 2022). The dynamic panel regression model can be written as follows:

$$Zscore_{it} = \beta_0 + \beta_1 Zscore_{it-1} + \beta_2 Zscoref_{it} + \beta_3 Lasset_{it} + \beta_4 CAR_{it} + \beta_5 FDR_{it} + \beta_6 CIR_{it} + \beta_7 NPF_{it} + \beta_8 GRDP_{it} + e_{it} \quad (1)$$

Where Zscore is bank stability, Zscoref is Funding Risk, assets are total assets, CAR is Capital Adequacy Ratio, FDR is Financing to Deposit Ratio, CIR is Operational Costs to Operational Income, NPF is Non-Performing Financing, and GRDP is Gross Regional Domestic Product. The asset is stated in the natural logarithm.

Apart from being influenced by the bank's internal conditions, bank stability is also very vulnerable to macroeconomic turmoil. COVID-19 hit the world economy in 2020. COVID-19 has reduced Indonesia's economic growth since the second quarter of 2020. Therefore, this research also includes COVID-19 as one of the factors influencing the stability of IRBs. The dynamic panel regression equation model, including Covid-19, can be written as follows:

$$Zscore_{it} = \beta_0 + \beta_1 Zscore_{it-1} + \beta_2 Zscoref_{it} + \beta_3 Lasset_{it} + \beta_4 CAR_{it} + \beta_5 FDR_{it} + \beta_6 CIR_{it} + \beta_7 NPF_{it} + \beta_8 GRDP_{it} + \beta_9 COVID_{it} + e_{it} \quad (2)$$

IRB's stability is generally measured using the Z-score (Khattak et al., 2022); (Widarjono et al., 2022). The Z-score is calculated as follows:

$$Z - Score = \frac{(ROA + {}^{EC}/_{TA})}{\sigma(ROA)} \quad (3)$$

ROA is the return on assets ratio, EC/TA is the ratio of equity to total assets, and σ(ROA) is the standard deviation of ROA. Z-score is a measure that relates a bank's capitalization level to its profitability and risk. Thus, the higher the Z-score value, the higher the resilience of a bank

The Z-scoref, which is funding risk, refers to the probability of bank failures arising from a fall in mobilizing third-party funds. Funding risk is measured utilizing the following formula (Adusei, 2015b)

$$Z - Scoref = \frac{[({}^{DEP}/_{TA}) + ({}^{EC}/_{TA})]}{\sigma({}^{DEP}/_{TA})} \quad (4)$$

DEP/TA is a ratio that measures total third-party funds to total assets owned by the bank. EC/TA is the equity to total assets ratio, and σ(DEP/TA) is the standard deviation of the third-party funds to assets ratio. The bank with a high Z-Scoref shows that the bank is more stable. Therefore, it is expected that funding risk, represented by the Z-scoref, has a positive impact on bank stability. The variables, measurements, and hypotheses of this research are displayed in Table 1.

The dynamic panel regression model in equations (1) and (2) contains an endogeneity because the lag of the dependent variable ($Zscore_{it-1}$) and the error variable (e_{it}) are correlated. Accordingly, we cannot estimate using the fixed effect method as in static panel regression. There are two methods for estimating dynamic panels, as equations (1) and (2), encompassing the difference GMM and system GMM (Blundell & Bond, 1998) to avoid the endogeneity problem. In this research, the system GMM method was used with a two-step system GMM, which is more robust than the difference GMM (Blundell & Bond, 1998).

Table 1. Definition of Variables and Hypotheses

Variable	Measurement	Symbol	Hypothesis
Stability	Net profit before tax to assets plus equity to assets divided by the standard deviation of the profit before tax (Khattak et al., 2022)	Zscore	
Funding risk	Total third-party funds to total assets plus the ratio of equity to total assets divided by the standard deviation of total third-party funds to total assets (Adusei, 2015b)	Zscoref	(+)
Bank size	Natural logarithm of total assets (Ibrahim et al., 2017)	Asset	(+)
Bank capital	Total Equity divided by assets weighted risk (Sutrisno & Widarjono, 2022).	CAR	(+)
Financing	The amount of financing disbursed is divided by the amount of third-party funds (Sutrisno & Widarjono, 2022).	FDR	(-)
Cost efficiency	The total of all operational expenses to operating income (Jusuf & Widarjono, 2024)	CIR	(-)
Financing risk	Financing default divided by the total financing (Widarjono et al., 2022)	NPF	(-)
Macroeconomic	Gross Domestic Regional Bruto	GRDP	(+)
Covid-19	The COVID-19 outbreak started in the second quarter of 2020	Covid	(-)

Results and Discussion

Summary statistics for the variables investigated in this study are presented in Table 2. The average Z-score was 25.83 with a standard deviation of 27.09. The Z-score has extreme variation because the standard deviation is greater than the mean. The average value of the Z-score as the main independent variable was 18.32 with a standard deviation of 20.95. This means that the Z-scoref is large because the standard deviation is greater than the average value. Average assets were IDR 91.11 billion, but IRBs vary due to the high standard deviation (150.92). The average CAR of 26.86 is higher than the minimum requirement of 12%. The level of financing is moderate with an average FDR of 92.79. The efficiency level is good with an average CIR of 66.01. However, the level of non-performing financing is high, with an average of 9.55%. This impaired financing is higher than the maximum value determined by the OJK of 5%.

Table 2. Descriptive statistics

Variable	Mean	Std. dev.	Min	Max
zscore	25.828	27.094	-3.303	351.167
zscoref	18.318	20.952	0.367	272.800
Asset	91.109	150.920	2.140	1402.051
CAR	26.873	19.493	0.200	149.500
FDR	92.792	42.723	0.540	975.130
CIR	66.008	36.966	0.754	983.408
NPF	9.955	8.839	0.040	67.500
GDP	0.936	0.453	-0.797	2.307
COVID	0.356	0.479	0.000	1.000

Sources: Author's calculation

Table 3. Correlation matrix

	Zscore	Zscoref	Size	CAR	FDR	CIR	NPF	GDP
Zscore.	1.000							
Zscoref.	0.117	1.000						
Size	0.172	0.200	1.000					
CAR	0.384	-0.086	-0.199	1.000				
FDR	-0.037	-0.061	0.087	0.106	1.000			
CIR	-0.106	0.008	-0.230	0.108	-0.031	1.000		
NPF	-0.197	0.058	-0.144	0.003	0.036	0.277	1.000	
GDP	-0.102	-0.059	-0.168	-0.138	0.031	-0.107	0.134	1.000
COVID	0.115	-0.013	0.145	0.170	-0.016	0.108	-0.146	-0.733

Sources: Author's calculation

Table 3 presents the correlation between independent variables. The magnitude of this correlation coefficient will determine whether the model contains multicollinearity problems. Except

for the correlation between GRDP and Covid (-0.733), all correlations between independent variables are below ± 0.5. Even though the correlation is the highest between GDP and COVID, this correlation is still below 0.85. Overall, there are no serious multicollinearity problems.

Baseline regression

The results of the two-step system GMM method for all IRBs as a baseline regression are shown in Table 4. Model 1 presents the estimation results without including Covid-19, while Model 2 displays the results by including Covid-19. Before discussing the results of the GMM method, the first step is to carry out several tests to check the validity of the GMM method. First, as a model that uses instrumental variables to overcome the problem of endogeneity, the validity test of the instrumental variables is carried out by looking at the Hansen test and the test for the number of instrumental variables. The Hansen test shows that it fails to reject the null hypothesis, and the number of instrument variables is smaller than the number of banks. The results of these two tests show that the instrument is valid. Second, the autocorrelation test using the Arellano Bond AR (-2) test. As a result, we fail to reject the null hypothesis, so there is no autocorrelation problem. Third, the Z-score variable for the previous period, Z-score (-1), is positive and significant. This means that bank stability in the current period is influenced by bank stability in the previous period. These findings indicate that bank stability is dynamic instead of static, so the dynamic panel regression model is more appropriate than the static panel regression.

Table 4. All Islamic Rural banks

	Model 1			Model 2		
Var	Coefficient	t-statistic	P-value	Coefficient	t-statistic	P-value
Zscore (-1)	0.083***	7.264	0.000	0.077	6.869***	0.000
Zscoref	0.117***	8.613	0.000	0.122	8.148***	0.000
Size	2.201*	1.637	0.053	1.972	1.450*	0.076
CAR	0.496***	7.614	0.000	0.481	7.340***	0.000
FDR	-0.062***	-2.954	0.004	-0.058	-2.267**	0.013
CIR	-0.040***	-2.565	0.006	-0.045	-2.827***	0.003
NPF	-0.345***	-5.921	0.000	-0.342	-5.960***	0.000
GRDP	1.474*	1.367	0.088	1.929	1.727**	0.044
COVID	-	-	-	0.860	1.046	0.150
cons	-25.448	-1.040	0.302	-21.885	-0.908	0.367
No. obs.	1631			1631		
No. bank.	83			83		
No ins	27			28		
AR (-1)	0.034			0.033		
AR (-2)	0.911			0.917		
Hansen	0.469			0.484		

Note *, **, *** significant at α=10%, α=5%, α=1%, respectively
Sources: Author's calculation

The results of model 1 and model 2 suggest consistent findings. All variables are significant except Covid-19. The discussion begins with the main variable in this research, namely Z-scoref. The financing risk (Z-scoref) is positive and significant at α= 1%, in accordance with the first hypothesis. High financing risk increases bank stability because the ability to mobilize funds is more stable. A bank with a high Z-scoref shows that the bank can control its revenues well. Thus, a high Z-scoref causes the bank to have a better level of stability. These findings suggest that IRBs that can map out effective strategies for mobilizing more savings are likely to increase their profitability and stability. The findings of this study confirm the findings of Adusei (2015b) in the case of rural banks in Ghana.

Assets are positive and significant at α=10% and in accordance with the second hypothesis. Banks with large assets will generate economies of scale and economies of scope, so that they can achieve low operating costs (Ibrahim et al., 2017). Low operating costs increase financing and generate higher profits. This finding is in line with the case of large Islamic banks in various countries (Ibrahim

et al., 2017; Mateev et al., 2021). These findings fail to support the theory of "too big to fail," so IRBs in Indonesia should have a large business scale to ensure the soundness of small banks.

CAR is positive and significant at α=1% for all models and is in line with the third hypothesis. This finding shows that capital has a positive effect on bank stability. This implies that the higher the CAR, the greater the bank's stability. Bank regulations are based on minimum capital requirements. Capital requirements are based on the minimum CAR obligation. In accordance with the Basel II and III accords, minimum capital is required to anticipate risks that are likely to occur. The high CAR thus reduces bank risk and strengthens bank stability. This finding supports the previous studies in the case of Islamic banks in the Middle East and North Africa (MENA) regions (Mateev et al., 2022)

Financing (FDR) is negative and significant at α=1% for model 1 and at α=5% for model 2, respectively, as predicted in the first hypothesis. Banks with high financing will reduce bank stability. On the one hand, high financing, if managed well, will increase bank profits and stability. However, high financing, if not managed well, will increase non-performing financing and reduce bank profits and stability. As a new player in rural banking, IRBs are expanding their business but do not have much experience, so they encounter higher financing defaults than their counterpart, conventional rural banks (BPR).

CIR is negative and significant at α=1% for all models. These findings imply that efficiency will increase stability and, conversely, inefficiency will reduce stability. Banks with low CIR indicate high efficiency, and high efficiency increases bank profits and stability. This finding confirms previous studies on the case of Islamic banking in the Middle East and North Africa (MENA) regions (Albaity et al., 2019). Therefore, IRBs must run operating activities efficiently by lowering operating costs (Yusuf, 2017).

NFP is negative and significant at α=1% for all models, meaning that high NPF will reduce bank stability. Financing is the bank's main activity in generating profits. When financing runs smoothly, bank stability strengthens due to high profits. However, when the financing disbursed experiences high default, the bank's ability to generate profits will also decrease, and low profits obviously reduce bank stability (Sutrisno & Widarjono, 2022). This research is in line with the case of Islamic banking in Indonesia (Iqbal et al., 2021)

The next variable is GRDP, which shows the business cycle. GRDP is positive and significant at α=10% and α=5% in models 1 and 2, respectively. This means that economic booms increase bank stability and economic downturns reduce bank stability. Economic upturns cause banks' ability to distribute more financing, and on the other hand, customers' ability to pay back their financing also strengthens (Widarjono, 2020). As a result, economic upturns increase bank profits and stability. The findings of this study support previous findings in the case of Islamic commercial banking in Indonesia (Kasri & Azzahra, 2020).

COVID has no effect on bank stability because of the government's serious efforts to reduce the negative impact of COVID on the economy and business. The government disbursed IDR 744.75 trillion to overcome the impact of COVID-19. Of the total recovery fund, the allocation fund for the business was IDR 62.8 trillion, and the funds for support for medium, small, and micro enterprises (MSMEs) and corporations were IDR 161.2 trillion. On the other hand, OJK, as a policymaker, has implemented several policies to stimulate IRBs to survive the COVID-19 pandemic. OJK issued a financing restructuring policy. These results are in line with the findings in the case of Islamic commercial banking in Indonesia (Nur Ajizah & Widarjono, 2023).

Large vs Small Islamic Rural Banks

Bank size greatly influences the performance of Islamic banks, including IRBs (Ibrahim et al., 2017). Our paper investigates IRBs' stability according to their asset because assets accurately represent their size. Accordingly, large and small IRBs are stratified based on their assets. Large banks are those with above-average assets, while those with below-average assets are categorized as small banks (Jusuf & Widarjono, 2024). Table 5 presents the results with a full model incorporating COVID-19. Our study rejects the Hasen test, and the number of instruments is less than the number of banks, so it warrants that the instruments are valid. The model is also free from autocorrelation problems according to the AR (-2) test. More importantly, the Z-score (-1) is positive and significant, suggesting that stability exists over time, and it guarantees that dynamic panel regression is more pronounced than static panel regression.

Funding risk, as our pivotal independent variable, positively affects both large and small SRBs, but the effect of funding risk on stability is larger for small IRBs than for large IRBs. The main problem with small IRBs is that they have inadequate infrastructure and facilities for mobilizing public funds. This suggests depositor confidence is more fragile in small IRBs due to limited branch networks and weaker technology infrastructure. Therefore, if they can mobilize funds well, it will have more impact on their stability than large banks (Widarjono et al., 2022). Bank size positively influences stability for small IRBs. CAR has a positive impact on the bank stability for both large and small IRBs. FDR had a negative effect on bank stability in the case of large banks. CIR has a negative effect on bank stability in the case of small banks. NPF has a negative effect on bank stability for all banks. COVID has a positive effect on stability at large banks, but it has a negative effect on small banks.

Table 5. Large vs small IRBs

	Large IRBs			Small IRBs		
	Coefficient	t-statistic	P-value	Coefficient	t-statistic	P-value
Zscore(-1)	0.123***	19.444	0.000	0.428***	19.358	0.000
Zscoref	0.098***	12.539	0.000	0.236***	3.543	0.001
Size	3.441	1.192	0.121	3.681***	2.951	0.003
CAR	0.531***	9.374	0.000	0.384***	15.705	0.000
FDR	-0.072**	-2.165	0.019	-0.009	-0.898	0.187
CIR	-0.014	-1.063	0.147	-0.047**	-2.307	0.013
NPF	-0.483***	-11.355	0.000	-0.079*	-1.518	0.069
GRDP	0.629	0.520	0.303	0.931	1.284	0.103
COVID	1.646**	2.787	0.004	-0.842***	-1.736	0.045
Cons	-47.765	-0.892	0.378	-60.210	-2.666	0.011
No. obs	782			849		
No. banks	40			43		
No. Inst.	29			29		
AR (-1)	0.103			0.132		
AR (-2)	0.991			0.186		
Hansen	0.556			0.251		

***, **, * signifikan pada α=1%, α=5%, α=10%.

Sources: Author's calculation

Conclusions

Our study examines the impact of funding risk, along with several control variables, including both bank-specific and macroeconomic conditions, on Islamic rural banks. The results indicate that funding risk has a positive impact on bank stability, but this effect is more pronounced for small IRBs than for large IRBs. Bank stability is also associated with bank-specific variables, and banks with strong fundamentals tend to enhance their stability. Banks with higher CAR and more efficiency strengthen bank stability. The economic upturn also supports bank stability, while economic shocks, such as Covid-19, lower bank stability for small IRBs.

The results of this study have several important implications for IRBs and policymakers. First, funding risk has a positive impact on bank stability. As a result, IRBs must take several steps to mobilize funds from the community, one of which is introducing Islamic banking products more intensively to the community. Stability also depends on capital adequacy. For this reason, IRBs also need to increase their capital so that they have a capital buffer to anticipate possible risks. Third, IRBs must improve operational efficiency by introducing banking technology, thereby enhancing the efficiency of their services. Third, banks must closely monitor their financing to ensure that NPF can be effectively controlled.

This study has some limitations. First, the Islamic rural banks studied are located only on the island of Java, so they do not represent all Islamic rural banks. Second, the study's time period did not utilize the latest data, especially after the COVID-19 pandemic.

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