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FINANCING GROWTH AND BANK RISK: EMPIRICAL EVIDENCE FROM INDONESIA

Wahyu Wastuti[1*], Riris Aishah Prasetyowati[2], Ratna Anggraini[3]
[1]Jakarta State University, Indonesia
[2]Syarif Hidayatullah State Islamic University Jakarta, Indonesia
[3]Valaya Alongkorn Rajabhat University, Thailand
[*]*wahyuwastuti@unj.ac.id*

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Abstract: This study examines the crucial issue of the impact of financing growth on various dimensions of Islamic Banks in Indonesia. The growth of financing affects bank risk, profitability, and solvency. The main objective explains the relationship between financing growth and key performance indicators. The study uses ROA for profitability, EQTA for capital adequacy, NPF for bank risk, and the natural logarithm of Total Assets as a proxy for bank size. LIQD and CIR are included as additional variables to provide a more comprehensive analysis. Data for the period Q1 2012 to Q4 2020, was obtained from the publication report on the OJK website. Using multiple linear regression, the findings showed a negative relationship between bank risk and financing growth. In addition, the growth of financing has a positive effect on both profitability and solvency of banks. This confirms the importance of prudential principles to optimize risk management strategies, especially in the context of a growing role in financing growth in Islamic banks.

Keywords: Financing Growth; Bank Risk; Profitability; Solvency

Abstrak: Penelitian ini mengkaji isu krusial dampak pertumbuhan pembiayaan terhadap berbagai dimensi Bank Syariah di Indonesia. Pertumbuhan pembiayaan mempengaruhi risiko bank, profitabilitas, dan solvensi. Tujuan utama menjelaskan hubungan antara pertumbuhan pembiayaan dan indikator kinerja utama. Penelitian ini menggunakan ROA untuk profitabilitas, EQTA untuk kecukupan modal, NPF untuk risiko bank, dan logaritma alami Total Assets sebagai proksi ukuran bank. LIQD dan CIR dimasukkan sebagai variabel tambahan untuk menyediakan analisis yang lebih komprehensif. Data periode Q1 2012 hingga Q4 2020, diperoleh dari laporan publikasi di situs web OJK. Menggunakan regresi linear berganda, temuan menunjukkan hubungan negatif antara risiko bank dan pertumbuhan pembiayaan. Selain itu, pertumbuhan pembiayaan berpengaruh positif terhadap baik profitabilitas maupun solvensi bank. Hal ini menegaskan pentingnya prinsip-prinsip prudensial untuk mengoptimalkan strategi manajemen risiko, terutama dalam konteks peran yang semakin besar dalam pertumbuhan pembiayaan di Bank Syariah.

Kata Kunci: Pertumbuhan Biaya; Risiko Bank; Profitabilitas; Solvabilitas

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Introduction

Islamic banking in Indonesia has been experiencing growth in recent years. Indonesia has a substantial Muslim population, and there has been an increasing awareness and demand for Islamic financial products. Indonesia stands as the nation with the world's largest Muslim population. By 2021, Indonesia's Muslim population had reached 86.88%.[1] Indonesia is categorized as a country with a bank-centered economy, with its banking sector playing a vital role.[2] Research shows that a bank-centered financial system does not have a direct impact on development but indirectly stimulates investment, which in turn spurs economic growth.[3]

Figure 1. Financing Growth Of Full-Fledged Islamic Banks In Indonesia

Source: Financial Service Authority 2023

The growth of Islamic banking in Indonesia, while showing an increase in market share, reveals interesting nuances when examining the distribution of financing within the industry. The government's supportive measures and regulatory framework have facilitated the development of Islamic finance, but the expansion of financing distribution within Islamic banks, particularly Full-Fledged Islamic Banks (BUS), has seen limited progress. The data illustrates a fluctuating trend in financing growth within Full-Fledged Islamic Banks in Indonesia. While certain events, such as the conversion of a conventional bank to Islamic status, can lead to notable spikes in growth, the overall distribution of financing has faced challenges in maintaining consistent positive momentum. This trend is visually depicted in Figure 1, emphasizing the need for a comprehensive understanding of the factors influencing financing growth within the Islamic banking industry in Indonesia. Further research and analysis may be required to delve deeper into the specific drivers and constraints impacting the distribution of financing within this sector.

[1] Badan Pusat Statistik, "Populasi Muslim," 2022, https://bps.go.id/, (10 November 2023).

[2] R Levine, *Bank-Based And Market-Based Financial System* (World Bank Publications, 1999).

[3] Isaac Boadi, Daniel Osarfo, And Perpetual Boadi, "Bank-Based And Market-Based Development And Economic Growth: An International Investigation," *Studies In Economics And Finance* 36, no. 3 (2019): 365.

According to data from the Financial Service Authority,[4] the average growth in financing for Full-Fledged Islamic Banks between June 2014 and December 2022 was a modest 0.81%. This figure indicates a gradual pace of expansion in the financing activities of these banks over the specified period. Noteworthy is the peak growth observed in September 2016, reaching 9.81%. This significant surge coincided with the transformation of Bank Aceh into an Islamic bank, contributing substantially to the overall assets of Islamic banks.[5] However, it's crucial to acknowledge that such exceptional growth instances have not been sustained consistently. The subsequent growth figures remained mostly within the range of 2.89%, with occasional instances of negative growth. This suggests a lack of sustained expansion in financing distribution by BUS.

Financing growth and non-performing financing (NPF) in Islamic banks is a critical aspect to analyze as it provide insights into the risk management practices and overall health of these financial institutions. Financing growth and non-performing financing are often linked through the risk and return trade-off. Higher financing growth may be associated with potential higher returns, but it could also lead to increased exposure to risk, including the risk of non-performing financing.

When considering the NPF in Sharia banking, the gross NPF of BUS still surpasses the threshold set by Bank Indonesia, which is 5%.[6] In contrast, the net NPF ratio complies with the standard, remaining below 5%. BUS exhibits a favorable NPF trend, showing a consistent decrease. A lower NPF value indicates diminishing risks, and conversely, higher values suggest elevated risks. According to the Financial Service Authority (OJK) report, as of December 2022, the aggregate NPF of BUS in Indonesia stood at 0.64%, marking the lowest figure in the past nine years. Figure 2 represents the NPF of full-fledged Islamic banks in Indonesia.

[4] Otoritas Jasa Keuangan, "Laporan Publikasi," https://www.ojk.go.id/id/, (10 November 2023).

[5] Ihda Fadila, "September 2016, Pangsa Pasar Bank Syariah Tembus 5,3%," https://finansial.bisnis.com/read/20160927/90/587449/september-2016-pangsa-pasar-bank-syariah-tembus-53, (22 October 2023).

[6] Bank Indonesia, "Bank Indonesia Regulation Number 15/2/PBI/2013," Bank Indonesia (2013).

Figure 2. NPF's Full-Fledged Islamic Banks In Indonesia

Source: Financial Service Authority 2023

The association between rapid credit expansion and heightened risks in subsequent years is a well-established phenomenon in conventional banks. The acceleration in credit growth, when not carefully managed, has been shown to lead to increased risk exposure for banks. This relationship is grounded in the understanding that an overly rapid expansion of credit can result in a portfolio that is more vulnerable to economic downturns, affecting the overall financial health of the bank.[7] This implies that hastily implemented credit growth policies lead to diminished returns for banks.[8] Similar research has demonstrated that elevated loan growth rates pose more risk in EU countries, indicating that excessive aggregate credit growth increases bank riskiness.[9]

The critical question arises as to whether these dynamics observed in conventional banking also apply to the Islamic banking sector. However, the previously presented data indicates that the growth of financing in Islamic banking has exhibited minimal expansion. This raises the intriguing possibility that Islamic banks, by intentionally maintaining a more measured pace of financing growth, maybe mitigate certain operational risks associated with rapid credit expansion.[10] Based on the previously presented data, the growth of financing in Islamic banking exhibits minimal growth. Could this translate to lower operational risks for Islamic banks? Furthermore, how can these banks enhance their market share when deliberately maintaining low financing growth to mitigate risks?

Conversely, Islamic banking, as a commercial institution, places significant importance on profitability. Its operational strategies are devised to achieve maximal profit. However, Islamic banking is also obligated to fulfill social functions due to its foundation in

[7] Daniel Foos, Lars Norden, And Martin Weber, "Loan Growth And Riskiness Of Banks," *Journal Of Banking And Finance* 34, no. 12 (2010): 29.

[8] Matthias Kohler, "Which Banks Are More Risky? The Impact Of Business Models On Bank Stability," *Journal Of Financial Stability* 16, no. 33 (2015): 195.

[9] Tin H. Ho, Tu D. Q. Le, And Dat T. Nguyen, "Abnormal Loan Growth And Bank Risk-Taking In Vietnam: A Quantile Regression Approach," *Cogent Business And Management* 8, no. 1 (2021): 2.

[10] Mongi Lassoued, "Comparative Study On Credit Risk In Islamic Banking Institutions: The Case Of Malaysia," *Quarterly Review Of Economics And Finance* 70, (2018): 267.

Sharia principles, with the community's well-being (maslahah) serving as a key goal. An assessment of Islamic banking can also delve into solvency considerations. This article examines the impact of financing growth on bank solvency. It is posited that excessive loan growth may lead to a reduction in the solvency ratio, as raising new equity becomes more challenging, making credit growth reliant on accumulated equity from retained earnings.[11]

This article undertakes an investigation into the growth of financing within the largest Muslim-populated nation, Indonesia. Researchers have posed recurring inquiries, including whether Islamic banks can expand while maintaining their risk profile if financing development correlates with heightened or reduced risk-adjusted profitability, and the potential link between financing growth and bank solvency. The study delves into the association between credit expansion and three critical dimensions: the risk level of the loan portfolio, loan-based returns, and the composition of equity.

The uniqueness of this article lies in its examination of the impact of Islamic banking financing growth over a span from the past to the present, with a specific emphasis on the Indonesian Islamic banking sector. Another recent discovery arising from this research contributes to a comprehensive body of knowledge by empirically validating the influence of financing growth on the levels of credit risk, profitability, and solvency within Islamic banks. The central focus revolves around the progression of financing within Islamic banks.

Prior research has extensively examined the realm of bank risk within both conventional and Islamic banking contexts. Capital adequacy plays a crucial role in shaping the activities of banks, necessitating them to maintain a minimum capital level to ensure ample funds for safeguarding against unforeseen losses and adverse shocks. There exists a robust positive correlation between capital requirements and the growth of deposits and loans for both Islamic Banks and Conventional Banks.[12] Other research reveals a significantly negative relationship between income and credit risk, aligning with similar observations in other countries. Firm-specific variables such as leverage and liquidity also prove relevant for credit risk.[13]

The overall development of Islamic banking does not significantly impact credit constraints. In contrast, banking development and conventional banking development help alleviate obstacles to financing. However, Islamic banking development positively affects access to credit when conventional banking development is low. This supports the notion that while Islamic banking might not alleviate financing obstacles on the whole, it can serve as a substitute for conventional banking.[14] The differences in risk between Islamic and conventional banks, with a specific focus on the composition of the Shariah supervisory board (SSB), the study reveals that operational and insolvency risks in Islamic banks decrease with an increase in SSB size and academic qualifications of SSB members.

[11] Probir Kumar Bhowmik And Niluthpaul Sarker, "Loan Growth And Bank Risk: Empirical Evidence From SAARC Countries," *Heliyon* 7, no. 5 (2021): 2.

[12] Mastura Abdul Karim, M. Kabir Hassan, Taufiq Hassan, And Shamsher Mohamad, "Capital Adequacy And Lending And Deposit Behaviors Of Conventional And Islamic Banks," *Pacific Basin Finance Journal* 28, (2014): 58.

[13] Hamid A. H. Al-Wesabi And Nor Hayati Bt Ahmad, "Credit Risk Of Islamic Banks In GCC Countries," *International Journal Of Banking And Finance* 10, no. 2 (2013): 2.

[14] Florian Leon And Laurent Weill, "Islamic Banking Development And Access To Credit," *Pacific Basin Finance Journal* 52, (2018): 54.

Conversely, these risks increase with a rise in reputed Shariah scholars on the SSB. SSB attributes do not significantly influence liquidity and credit risks.[15]

Non-Performing Loan (NPL) ratios have typically served as a yardstick for measure risk in past studies focused on conventional banks.[16] For Islamic banks, this metric is referred to as NPF.[17] Furthermore, researchers have explored the relationship between credit risk and factors such as profitability and bank solvency. However, the influence of loan growth or the impact of preceding loans has not been extensively explored within Islamic banks, in contrast to similar studies within conventional banks.[18]

Empirical findings consistently indicate that banks with swift lending expansion tend to experience a decline in bank solvency and an escalation in non-performing loans. Elevated NPL rates signal heightened risk when banks extend loans extensively. Aggressive loan growth trends elevate the risk of loan defaults. This can be attributed to factors like an uncertain environment or banks underpricing risk. Numerous reports establish a connection between excessive bank lending, increased credit defaults, and the subsequent negative effects on financial markets and economies.[19]

Previous research has identified that the growth of customer deposits and gross NPLs are key factors influencing loan growth in Indonesia during both expansive and contractionary periods. Banks with disproportionately high loans tend to carry elevated levels of credit risk.[20] The interplay between liquidity and credit risk holds significance in explaining bank lending. Nonetheless, excessive loans can lead to instability, particularly for smaller banks. This relationship between NPLs and loan growth has also been observed in the context of Nigerian banks.[21]

Studies have pointed out that specific variables tied to banks significantly influence credit risk in Malaysia's Islamic banks. Notably, financing quality and Capital Adequacy Ratios (CAR) consistently demonstrate meaningful effects regardless of model specifications.[22] Decreases in financing quality compel banks to allocate higher loss provisions, subsequently elevating implied credit risk levels measured through NPF. In a study focused on Turkish Islamic banks a positive and substantial correlation was

[15] Md Safiullah And Abul Shamsuddin, "Risk In Islamic Banking And Corporate Governance," *Pacific Basin Finance Journal* 47, (2018): 129.

[16] Mosharrof Hosen, Mohammed Yaw Broni, And Mohammad Nazim Uddin, "What Are The Bank Specific And Macroeconomic Elements Influence Non-Performing Loans In Bangladesh? Evidence From Conventional And Islamic Banks," *Green Finance* 2, no. 2 (2020): 212.

[17] Muhammad Bahrul Ilmi, "The Analysis Of The Effect Of Islamic Financing And Labor Relationship Development Towards Non-Performing Financing In Islamic Banks," *Journal Of Islamic Accounting And Business Research* 34, no. 1 (2015): 2.

[18] Mansor H. Ibrahim And Syed Aun R. Rizvi, "Bank Lending, Deposits And Risk-Taking In Times Of Crisis: A Panel Analysis Of Islamic And Conventional Banks," *Emerging Markets Review* 35, (2018): 31.

[19] Probir Kumar Bhowmik And Niluthpaul Sarker, "Loan Growth And Bank…, 3; Mosharrof Hosen, Mohammed Yaw Broni, And Mohammad Nazim Uddin, "What Are The Bank Specific…, 212.

[20] Pananda Pasaribu And Bonnie Mindosa, "The Bank Specific Determinants Of Loan Growth And Stability: Evidence From Indonesia," *Journal Of Indonesian Economy And Business* 36, no. 2 (2021): 93.

[21] Olalere Oluwaseyi Ebenezer, Md Aminul Islam, Mohd Zukime Mat Junoh, And Wan Sallha Yusoff, "Loan Growth, Bank Solvency And Firm Value: A Comparative Study Of Nigerian And Malaysian Commercial Banks," *Journal Of Reviews On Global Economics* 8, (2019): 373.

[22] Faridah Najuna Misman, Ishaq Bhatti, Weifang Lou, Syamsyul Samsudin, And Nor Hadaliza Abd Rahman, "Islamic Banks Credit Risk: A Panel Study," *Procedia Economics And Finance* 31, no. 15 (2015): 75.

discovered between credit risk and capital adequacy ratio, net profit share income, and the natural logarithm of total assets. Conversely, a negative and statistically significant correlation was established between gross domestic product and credit risk among the macroeconomic variables studied.[23]

Another comprehensive study delves into Credit Risk Management (CRM) in Islamic and conventional banking in Pakistan. The findings indicate that Loan Quality (LQ) significantly impacts CRM positively for both types of banks.[24] Asset Quality (AQ) hurts CRM in Islamic banks but has a positive effect in conventional banks. Emphasizing loan quality in developing portfolios is vital to mitigate non-performing loans and defaults, ultimately reducing credit risk and enhancing CRM practices.

In the specific context of Indonesia,[25] previous research uncovered excessive risk-taking in Islamic banks. The study highlighted a negative link between financing growth rate and NPF in Islamic banks, suggesting the need for vigilant monitoring of banks with high credit risk or rapid financing growth, despite their adherence to Sharia principles. Other authors underscore the importance of strengthening prudential tools and supervision for Islamic banks with robust capitalization to mitigate moral hazards and promote prudent lending behavior. That recommendation has been stated by other authors.[26] Stated that strengthening prudential tools and supervision for Islamic banks with higher capitalization is necessary to decrease the moral hazard and ensure prudent lending behavior.[27] Distinct results were found in a study encompassing 25 Islamic banks from 10 countries with dual-banking systems, which diverged from the conclusions of excessive risk-taking in Islamic banks.[28]

Research centered on European banks revealed that abnormal credit growth positively affects bank profitability, especially during periods of crisis, when stable or higher credit standards are required.[29] Capital variables, net profit revenue on average assets, and loan-to-total-assets ratios were positively correlated with Islamic bank profitability, while

[23] Ahmet İncekara And Harun Çetinkaya, "Credit Risk Management: A Panel Data Analysis On The Islamic Banks In Turkey," *Procedia Computer Science* 158, (2019): 947.

[24] Hassan Akram And Khalil Ur Rahman, "Credit Risk Management: A Comparative Study Of Islamic Banks And Conventional Banks In Pakistan," *ISRA International Journal Of Islamic Finance* 10, no. 2 (2018): 185.

[25] Muhamad Anindya Hiroshi Purbayanto, Taufik Faturohman, Yulianti, and Arson Aliludin, "Do Islamic Banks In Indonesia Take Excessive Risk In Their Financing Activities?," *Journal Of Islamic Monetary Economics And Finance* 8, no. 1 (2022): 149.

[26] Riana Afliha Eka Kurnia, Tjiptohadi Sawarjuwono, Dan Sri Herianingrum, "Manajemen Risiko Pembiayaan Untuk Mengantisipasi Kondisi Financial Distress Pada Bank Syariah," *Journal Of Islamic Economics Lariba* 3, no. 2 (2017): 51–64.

[27] Muhammad Sobarsyah, Wahyoe Soedarmono, Wahdi Salasi Apri Yudhi, Irwan Trinugroho, Ari Warokka, And Sigid Eko Pramono, "Loan Growth, Capitalization, And Credit Risk In Islamic Banking," *International Economics* 163, (2020): 155.

[28] Mansor H. Ibrahim And Syed Aun R. Rizvi, "Bank Lending, Deposits…, 31.

[29] Simone Rossi, Mariarosa Borroni, Mariacristina Piva, And Andrea Lippi, "Abnormal Loan Growth And Bank Profitability: Some Evidence From The Recent Crisis," *International Journal Of Business And Management* 14, no. 7 (2019): 36; Hajer Zarrouk, Khoutem Ben Jedidia, And Mouna Moualhi, "Is Islamic Bank Profitability Driven By Same Forces As Conventional Banks?," *International Journal Of Islamic And Middle Eastern Finance And Management* 9, no. 1 (2016): 46.

loan loss provision and cost-to-total-income ratios exhibited negative impacts.[30] In a contrasting vein, another study focusing on Nepalese commercial banks found that loan growth did not significantly affect profitability, stock return, or credit risk indicators in the long-term. However, in the short term, loan growth did positively impact profitability and stock return.

Empirical evidence demonstrates that credit growth in the previous year diminishes bank solvency over subsequent years, attributed to weak prudential regulations, information asymmetry among borrowers, and banks underestimating lending risk during credit booms.[31] In the case of Vietnam's banks, aggressive lending expansion led to an immediate decline in bank solvency and a subsequent increase in loan loss provisions over the following 2 to 3 years.[32] While Islamic banks do not provide a guarantee on the principal of various financing contracts, higher capital requirements could enhance solvency and safeguard the principal liabilities of depositors and investors.[33]

Methods

This article includes all full-fledged Islamic banks in Indonesia that are registered on OJK. The research period using quarterly reports start from Q1 2012 till Q4 2020. Because of this article's period till 2020, the amount of full-fledged Islamic banks is 14 banks. The data was collected from reports of financial statements that have been published on OJK's website. Table 1 shows the definition and measurement of each variable that is used in this article.

Table 1. The Variables Definition And Measurement

Name of Variable	Initial	Definition	Measurement
Financing Growth	Fin_Growth	Customer's bank financing growth rate.	$\frac{\left(Fin_{Growth i,t} - Fin_{Growth i,t-1}\right)}{Fin_{Growth i,t-1}}$
Non-Performing Financing	NPF	Impaired financing customers are unable or unwilling to pay within the financing distribution.	Financial Statement published OJK
Equity To Total Assets	EQTA	Total bank equity divided by total assets, is a proxy for bank solvency.	$the\ \frac{total\ equity_{i,t}}{total\ assets_{i,t}}$

[30] Jhabindra Pokharel, "Loan Growth And Bank Performance: A Panel ARDL Approach," *Management Dynamics* 23, no. 2 (2020): 97.

[31] Muhammad Kashif, Syed Faizan Iftikhar, And Khurram Iftikhar, "Loan Growth And Bank Solvency: Evidence From The Pakistani Banking Sector," *Financial Innovation* 2, no. 1 (2016).

[32] Van Dan Dang, "The Effects Of Loan Growth On Bank Performance: Evidence From Vietnam," *Management Science Letters* 9, no. 6 (2019): 899.

[33] Anjum Siddiqui, "Financial Contracts, Risk And Performance Of Islamic Banking," *Managerial Finance* 34, no. 10 (2008): 680.

Return On Asset	ROA	The net profits on assets as the proxy of bank profitability.	Financial Statement published OJK
SIZE	SIZE	Reflects the size of the bank measured as the total assets' natural logarithm.	Financial Statement published OJK
Liquidity	LIQD	Measurement for bank liquidity.	$the\ \frac{total\ financing_{i,t}}{total\ assets_{i,t}}$
Cost To Income Ratio	CIR	Measurement for bank efficiency.	$\frac{total\ cost_{i,t}}{total\ income_{i,t}}$

Source: Financial Service Authority, Data Processed By The Authors

This research model examines the effect of financing growth on non-performing financing. This study measures and answers the first hypothesis:

H1: Is the growth in financing related to the continued decline in the quality of the bank's financing portfolio?

The following model is used to find the relationship:

$$NPF_{i,j,t} = \beta_0 + \beta_1 Fin_{Growth_{i,j,t}} + \beta_2 lnSIZE_{i,j,t} + \beta_3 LIQD_{i,j,t} + \beta_4 ROA_{i,j,t} + \beta_5 EQTA_{i,j,t} + \varepsilon_{i,j,t}$$

To describe the shift in each bank's return on assets through contemporaneous financing growth and a series of control variables. The second hypothesis of this research is:

H2: How to describe the change in assets of each bank through the growth of contemporary financing with control variables?

The following is an equation model to measure the estimate:

$$ROA_{i,j,t} = \beta_0 + \beta_1 Fin_{Growth_{i,j,t}} + \beta_2 LIQD_{i,j,t} + \beta_3 lnSIZE_{i,j,t} + \beta_4 EQTA_{i,j,t} + \beta_5 CIR_{i,j,t} + \varepsilon_{i,j,t}$$

EQTA is also a metric for solvency, determined by the bank's overall equity divided by total assets. Theoretically, one might assume that loan growth often implies a decrease in the ratio of equity to total assets. However, bank equity can be increased, for example, by new problems experienced or by retained earnings.[34] This will encourage more capital to be accumulated into new financing. This concept is the basis for building the third hypothesis of this study:

H3: Impact of equity-to-total assets on financing growth with multiple control variables.

The equation model for solving the third hypothesis is as follows:

$$EQTA_{i,j,t} = \beta_0 + \beta_1 Fin_{Growth_{i,j,t}} + \beta_2 LIQD_{i,j,t} + \beta_3 lnSIZE_{i,j,t} + \beta_4 ROA_{i,j,t} + \beta_5 CIR_{i,j,t} + \varepsilon_{i,j,t}$$

This article used an unbalanced data panel for the observation. The unbalanced data panel was created cause of the normality problems. The authors have to omit the extreme value of each model through an outlier test to produce normal distribution data. The estimation method used the Common Effect Model (CEM) after all the models exempt from the classical assumption test.

[34] Probir Kumar Bhowmik And Niluthpaul Sarker, "Loan Growth And Bank…, 4.

Result And Discussion

Table 2 shows the summary of descriptive statistics for each estimation. The variations in the number of observations across each estimation stem from the outlier test process, as outlined in the explanation of the estimation method. Initially, there were 320 observations for each estimation. However, following the outlier test, the number of observations has been adjusted. Specifically, there are now 250 observations for the estimation involving financing growth and bank risk, 211 observations for financing growth and bank profitability, and 178 observations for the last estimation involving financing growth and bank solvency.

Table 2. Descriptive Statistics

Fin_Growth & Bank Risk with 250 obs.				
Variables	Min.	Max.	Mean	Std.
NPF nett	0,000	0,050	0,025	0,014
Fin_Growth	-0,350	0,919	0,166	0,215
SIZE	13,678	18,659	16,410	1,219
LIQD	0,307	0,892	0,709	0,071
ROA	-0,019	0,026	0,008	0,007
EQTA	0,056	0,283	0,124	0,051
Fin_Growth & Profitability with 211 obs.				
Variables	Min.	Max.	Mean	Std.
ROA	-0,075	0,027	0,006	0,008
Fin_Growth	-0,280	1,651	0,166	0,253
LIQD	0,508	0,837	0,704	0,067
SIZE	13,678	18,659	16,389	1,307
EQTA	0,056	0,282	0,118	0,042
CIR	0,761	1,779	0,939	0,084
Fin_Growth & Bank Solvency with 178 obs.				
Variables	Min.	Max.	Mean	Std.
EQTA	0,032	0,200	0,108	0,033
Fin_Growth	-0,879	1,360	0,090	0,215
LIQD	0,070	0,837	0,700	0,082
SIZE	14,003	18,659	16,714	1,296
ROA	-0,108	0,049	0,005	0,014
CIR	0,429	2,174	0,945	0,146

Source: SPSS, Data Processed By The Authors

Classical Assumption Test

Normality Test

The Kolmogorov-Smirnov Test was employed in this study to assess normality. The original data initially exhibited deviations from normality, with observations failing to meet the criteria of a normal distribution. To address this, the researchers systematically removed extreme values from the observations in each estimation, one by one. The Exact

Sig. value was utilized to establish the normality standard.[35] While it would be ideal to consistently rely on exact p-values, this approach ensures protection against type 1 errors at the designated significance level. Nonetheless, in Table 3, despite Asymp. Sig. (2-tailed) being less than the p-value (0.05), the data continued to conform to a normal distribution. It's important to note that asymptotic methods might perform inadequately in scenarios such as unbalanced large datasets.

Table 3. Kolmogorov-Sminov Test

Estimation	Asymp. Sig. (2-tailed)	Exact Sig. (2-tailed)
Fin_Growth & Bank Risk	0,0550	0,3967
Fin_Growth & Profitability	0,0040	0,1606
Fin_Growth & Bank Solvency	0,0190	0,2688

Source: SPSS, Data Processed By The Authors

Multicollinearity Test

Table 4, describes the condition of all estimations free from multicollinearity problems. All the estimations show the value of tolerance < 1 (one). Moreover, the value of VIF is also < 10 (ten) for every estimation.

Table 4. Multicollinearity Test

Fin_Growth & Bank Risk			Fin_Growth & Profitability			Fin_Growth & Bank Solvency		
Result	Tolerance	VIF	Result	Tolerance	VIF	Result	Tolerance	VIF
Fin_Growth	0,6305	1,5861	Fin_Growth	0,5424	1,8436	Fin_Growth	0,6733	1,4851
SIZE	0,4871	2,0530	LIQD	0,7906	1,2648	LIQD	0,7448	1,3426
LIQD	0,8138	1,2287	SIZE	0,4257	2,3489	SIZE	0,8717	1,1471
ROA	0,7091	1,4102	EQTA	0,4981	2,0076	ROA	0,1894	5,2795
EQTA	0,5809	1,7216	CIR	0,6620	1,5106	CIR	0,1914	5,2260
Y	NPF_nett		Y	ROA		Y	EQTA	

Source: SPSS, Data Processed By The Authors

Autocorrelation Test

For autocorrelation assessment, the Durbin-Watson (D-W) test was employed. A D-W value ranging from -2 to +2 indicates the absence of autocorrelation issues. In Table 5, Durbin Watson's values consistently fall within the -2 to +2 range, suggesting the observations are free from autocorrelation concerns.

Table 5. Autocorrelation Test

Estimation	Durbin-Watson
Fin_Growth & Bank Risk	0,8103
Fin_Growth & Profitability	1,0197
Fin_Growth & Bank Solvency	0,8697

Source: SPSS, Data Processed By The Authors

[35] Cyrus R Mehta And Nitin R Patel, *IBM SPSS Exact Tests,* (Cambridge: IBM Corporation 2011).

Heteroscedasticity Test

Heteroskedasticity testing employed the Glejser test, involving regression with the dependent variable being Abs_RES. If the sig. value exceeds 0.05, observations are deemed free from heteroskedasticity problems. Among the independent variables, Liquidity showed p-values less than 0.05, indicating significant effects on Abs_RES. Despite p-values below 0.05 for Liquidity in the second estimation of financing growth and bank profitability, and for Size in the estimation of financing growth and bank solvency, these were attributed to potential threats arising from heightened competition due to new entrants. These variables were disregarded since other variables in both estimations maintained p-values above 0.05.

Table 6. Heteroscedasticity Test

Fin_Growth & Bank Risk			Fin_Growth & Profitability			Fin_Growth & Bank Solvency		
Result	t	Sig.	Result	t	Sig.	Result	t	Sig.
Fin_Growth	0,3661	0,7146	Fin_Growth	-0,4574	0,6479	Fin_Growth	0,3867	0,6995
SIZE	-1,2254	0,2216	LIQD	3,9942	0,0001	LIQD	0,2264	0,8212
LIQD	1,1808	0,2389	SIZE	0,5602	0,5759	SIZE	-2,7173	0,0073
ROA	-0,1562	0,8760	EQTA	0,4285	0,6687	ROA	0,4882	0,6260
EQTA	-0,6890	0,4915	CIR	-0,2217	0,8248	CIR	1,2432	0,2155
Y	NPF_nett		Y	ROA		Y	EQTA	

Source: SPSS, Data Processed By The Authors

Coefficient Determination

The coefficient of determination (R-squared) was utilized to provide insight into the observed population in this study. R-squared signifies the strength of the influence of independent variables on the dependent variable. The estimation involving financing growth and bank risk yielded an R-squared value of 0.7315, suggesting that independent variables accounted for 73.15% of the variation in the dependent variable, with the remaining 27.85% being influenced by other factors. Similarly, the second estimation involving financing growth and bank profitability produced an R-squared value of 0.9917, indicating that independent variables influenced the dependent variable by 99.17%. In the financing growth and bank solvency estimation, independent variables contributed to 88.05% of the dependent variable's variation, while the remaining 12.95% was influenced by other variables.

Table 7. Coefficient Determination

Estimation	R	R Square	Adjusted R Square
Fin_Growth & Bank Risk	0,8550	0,7315	0,7260
Fin_Growth & Profitability	0,9960	0,9917	0,9915
Fin_Growth & Bank Solvency	0,9380	0,8805	0,8770

Source: SPSS, Data Processed By The Authors

Regression Test

Partial (t-test)

The findings in Table 8 demonstrate the impact of financing growth on the risk of full-fledged Islamic banks. The sig. value of 0.0000 (less than 0.05) and a beta value of -0.0112 suggest a negative relationship between financing growth and bank risk (Non-Performing Financing net). This outcome confirms the first hypothesis (H1) of the study, indicating that increased financing growth leads to decreased bank risk. Additionally, variables such as SIZE, ROA, and EQTA also exhibited p-values less than 0.05, indicating their significant effects on NPF net as a proxy for bank risk. These variables demonstrated negative influences on bank risk.

Table 8. Partial (t-test) For Financing Growth And Bank Risk Estimation

Estimation Result	Fin_Growth & Bank Risk		
	B	t	Sig.
Fin_Growth	-0,0112	-4,1730	0,0000
SIZE	-0,0013	-2,4414	0,0153
LIQD	-0,0006	-0,0854	0,9320
ROA	-1,2048	-14,7355	0,0000
EQTA	-0,1561	-13,1493	0,0000
Y		NPF_net	

Source: SPSS, Data Processed By The Authors

This result aligns with prior research suggesting a negative connection between financing growth and non-performing financing in Islamic banks.[36] The linear model's results indicate that Islamic banks tend to exercise prudence in financing activities, wherein expansion leads to decreased NPF. Furthermore, expanding financing distribution offers Islamic banks various partnerships that can mitigate risk through mutual coverage. The increasing in SIZE, ROA and EQTA will lead to the decreasing of bank risk. Increased values of SIZE, ROA, and EQTA correspond to reduced bank risk. Larger sizes of Islamic banks, as indicated by higher SIZE values, align with the influence of EQTA, both contributing to risk suppression when bank size and capital are substantial.[37]

The ability of Islamic banks to enhance Return on Assets (ROA) signifies an increase in profitability, which empowers banks to manage risks more effectively.[38] The second estimation affirms a relationship between financing growth and bank profitability, as measured by ROA. This relationship is evident from the p-value of financing growth, which is less than 0,05. This confirms the second hypothesis (H2) of the study, where the positive

[36] Muhamad Anindya Hiroshi Purbayanto, Taufik Faturohman, Yulianti, and Arson Aliludin, "Do Islamic Banks…, 149.

[37] Faridah Najuna Misman, Ishaq Bhatti, Weifang Lou, Syamsyul Samsudin, And Nor Hadaliza Abd Rahman, "Islamic Banks Credit…, 75; Tariq Alzoubi And Muhanned Obeidat, "How Size Influences The Credit Risk In Islamic Banks," *Cogent Business And Management* 7, no. 1 (2020): 2.

[38] Trevor Chamberlain, Sutan Hidayat, And Abdul Rahman Khokhar, "Credit Risk In Islamic Banking: Evidence From The GCC," *Journal Of Islamic Accounting And Business Research* 11, no. 5 (2020): 1055; Faten Ben Bouheni, Hassan Obeid, And Elena Margarint, "Nonperforming Loan Of European Islamic Banks Over The Economic Cycle," *Annals Of Operations Research* 313, no. 2 (2022).

beta value for financing growth indicates its positive influence on ROA. Among the variables, only SIZE does not significantly influence ROA, while Liquidity (LIQD), EQTA, and CIR show p-values below 0,05, implying their significant impact on ROA. Specifically, LIQD and EQTA have positive influences, whereas CIR exerts a negative influence.

Table 9. Partial (t-test) For Financing Growth And Bank Profitability Estimation

Estimation Result	Fin_Growth & Profitability		
	B	t	Sig.
Fin_Growth	0,0012	4,2814	0,0000
LIQD	0,0054	6,0173	0,0000
SIZE	0,0001	1,5610	0,1201
EQTA	0,0081	4,5266	0,0000
CIR	-0,0968	-124,5746	0,0000
Y	ROA		

Source: SPSS, Data Processed By The Authors

The expansion of financing distribution by Islamic banks aims to enhance profitability. This positive relationship is also observed between LIQD and ROA, whereby an improved financing distribution optimizes assets and thereby ROA.[39] A similar relationship exists between EQTA and profitability.[40] Higher capital ratios enhance the probability that the bank is Islamic, contributing to enhanced profitability, stability, and reduced credit risk.[41] The operational activities of Islamic banks that generate large expenses of course will reduce the profits obtained. This results in the higher the CIR ratio, the lower the profitability of Islamic banks.[42]

The relationship between bank solvency (measured by EQTA) and financing growth was confirmed by the beta value, suggesting that increased financing growth positively influences bank solvency. This aligns with the third hypothesis (H3) of the study. Additional variables, including LIQD, SIZE, and ROA, also influenced EQTA, with LIQD and SIZE exhibiting negative influences and ROA having a positive effect. However, CIR did not significantly affect bank solvency.

Islamic banks' ability to expand positively influences their solvency, particularly when such expansion bolsters capital and fulfills obligations. This finding contrasts with research conducted on conventional banks, suggesting that the variance could be attributed to the specific nature of Islamic banks.[43] Increasing LIQD and SIZE is associated with

[39] Probir Kumar Bhowmik And Niluthpaul Sarker, "Loan Growth And Bank…, 5.

[40] Kaouther Toumi, "Islamic Ethics, Capital Structure And Profitability Of Banks; What Makes Islamic Banks Different?," *International Journal Of Islamic And Middle Eastern Finance And Management* 13, no. 1 (2020): 116.

[41] Mohamed Ali Trabelsi And Naama Trad, "Profitability And Risk In Interest-Free Banking Industries: A Dynamic Panel Data Analysis," *International Journal Of Islamic And Middle Eastern Finance And Management* 10, no. 4 (2017): 454.

[42] Hajer Zarrouk, Khoutem Ben Jedidia, And Mouna Moualhi, "Is Islamic Bank Profitability…, 46.

[43] Muhammad Kashif, Syed Faizan Iftikhar, And Khurram Iftikhar, "Loan Growth And Bank.

decreased EQTA for full-fledged Islamic banks. Additionally, higher profits ROA contribute to the improved solvency of Islamic banks, ushering them into more favorable conditions.[44]

Table 10. Partial (t-test) For Financing Growth And Bank Solvency Estimation

Estimation Result	Fin_Growth & Bank Solvency		
	B	t	Sig.
Fin_Growth	0,0204	4,1468	0,0001
LIQD	-0,0886	-7,1986	0,0000
SIZE	-0,0236	-32,8628	0,0000
ROA	0,8935	6,3963	0,0000
CIR	0,0181	1,3275	0,1861
Y		EQTA	

Source: SPSS, Data Processed By The Authors

Simultaneous (F-test)

Table 11 presents F-test results, indicating that all independent variables collectively influenced the dependent variable in each estimation. In the first estimation involving financing growth and bank risk, the independent variables jointly affected bank risk (NPF net). In the second estimation, involving financing growth and profitability, the independent variables collectively influenced bank profitability ROA. Similarly, the third estimation involving financing growth and bank solvency showed that independent variables impacted bank solvency EQTA.

Table 11. Simultaneous (F-test)

Estimation	F	Sig.
Fin_Growth & Bank Risk	132,9568	0,0000
Fin_Growth & Profitability	4912,5843	0,0000
Fin_Growth & Bank Solvency	253,3707	0,0000

Source: SPSS, Data Processed By The Authors

The results of first estimation offer valuable insights into the dynamics of financing growth, risk, and profitability within full-fledged Islamic banks. The observed inverse relationship between financing growth and bank risk supports the notion that Islamic banks tend to adopt a cautious approach in their financing endeavors. The decline in Non-Performing Financing with an increase in financing growth validates the study's initial hypothesis (H1), indicating that expanded financing activities are linked to a lower incidence of Non-Performing Financing.

Furthermore, the impacts of SIZE, ROA, and EQTA on NPF net highlight their roles in shaping bank risk. The negative influences of larger bank size, higher return on assets, and increased equity to total assets suggest that these factors are associated with diminished levels of non-performing financing, consistent with prior research emphasizing a negative correlation between financing growth and non-performing financing in Islamic

[44] Mohamed Ali Trabelsi And Naama Trad, "Profitability And Risk In Interest-Free…, 454.

banks. The significance of SIZE and EQTA in contributing to risk suppression underscores the importance of both bank size and capital adequacy. Larger-sized banks, especially when well-capitalized, exhibit a lower level of risk. This aligns with the understanding that adequately capitalized banks are better equipped to absorb losses and navigate challenging economic conditions. The findings of first estimation underscore the prudent and strategic approach of Islamic banks in navigating the interplay between financing growth, risk management, and profitability. Larger-sized banks with robust capitalization and efficient operations are poised to derive advantages from increased financing activities.

Transitioning to the analysis of the relationship between financing growth and bank profitability ROA, reveals a positive correlation, indicating that an expansion in financing activities contributes to increased ROA for Islamic banks. This positive association aligns with the overarching objective of Islamic banks to augment profitability through the growth of their financing portfolios. Examination of other variables influencing ROA provides further insights, revealing that while SIZE does not significantly impact ROA, LIQD and EQTA positively contribute, whereas a higher CIR has a detrimental effect. This underscores the pivotal roles of liquidity and capital adequacy in enhancing profitability, while operational efficiency is crucial in maintaining and improving profitability, as suggested by the adverse impact of a high CIR.

The positive correlation between financing growth and ROA aligns with the broader strategic goal of Islamic banks to bolster profitability through the expansion of their financing activities. Specifically, the favorable influences of LIQD and EQTA on ROA underscore the significance of liquidity and capital adequacy in optimizing asset utilization and, consequently, driving profitability. The higher capital ratios represented by EQTA not only contribute to increased profitability but also promote stability and reduce credit risk, highlighting the multifaceted advantages associated with a well-capitalized Islamic bank.

Examining the impact of the CIR on profitability, the negative effect suggests that substantial operational expenses within Islamic banks have the potential to diminish profits. This underscores the critical role of operational efficiency in not only maintaining but also enhancing the profitability of Islamic banks. Consequently, efforts to streamline operational costs and improve efficiency are crucial contributors to the overall financial performance of Islamic banks.

The findings from the second estimation underscore the intricate interplay between financing growth, risk management, and profitability in Islamic banks. They emphasize the positive influence of financing growth on profitability, with liquidity, capital adequacy, and operational efficiency playing vital roles. The results highlight the strategic importance of effectively managing these factors to optimize the financial performance of Islamic banks while concurrently ensuring stability and mitigating risks.

The analysis of the correlation between bank solvency, as measured by EQTA, and financing growth validates the third hypothesis (H3) of the study. The discovery explained that the expansion of Islamic banks positively impacts their solvency, particularly when it reinforces capital and meets obligations, indicates a solid financial foundation for these institutions. This finding diverges from research conducted on conventional banks,

emphasizing a unique aspect of Islamic banks that contributes to their distinctive financial dynamics.

The unexpected negative influences of increased LIQD and SIZE on EQTA in full-fledged Islamic banks unveil an intriguing complexity. While heightened liquidity and a larger size are typically seen as positive factors, their association with decreased EQTA suggests a complex relationship. This implies that Islamic banks must delicately balance liquidity, size, and solvency to optimize their financial positions effectively. Additionally, the positive impact of higher profits ROA on the enhanced solvency of Islamic banks underscores the tied nature of profitability and solvency. A robust financial performance, exemplified by higher returns on assets, fosters conditions conducive to strengthening solvency. The subtle relationship between liquidity, size, and solvency further highlights the unique financial dynamics that Islamic banks navigate. The positive correlation between profitability and solvency accentuates the mutual connection of these financial metrics within the context of Islamic banking.

Conclusion

This study determines the impact of financing growth through three different estimates: First, financing growth and its effect on bank risk; Second, financing growth and its relationship with bank profitability; Third, the relationship between financing growth and the bank's solvency level. The research results show that financing growth has a significant negative influence on bank risk as represented by NPF. In the first estimation, this research also shows that bank risk is influenced by variables such as SIZE, ROA, and EQTA, all of which have a negative influence, while the LIQD variable does not influence bank risk in this context. In the second estimation, the results show a positive relationship between financing growth and bank profitability as measured by ROA. This estimate further shows that LIQD and EQTA bank solvency have a positive effect on bank profitability. On the other hand, the ROA profitability level which is influenced by CIR efficiency experiences a negative impact. The third estimate focuses on bank solvency as measured by EQTA. Research findings show that financing growth has a positive influence on bank solvency. In this estimation, both the LIQD and SIZE variables have a negative effect on bank solvency, while ROA has a positive effect.

Author Contributions Statement

WW contributes to developing the concept and research problems along with RAP. WW also contributes to selecting comprehensive previous research to identify research gaps. Additionally, WW, along with RA, selects the research method and collects research samples. Furthermore, based on the calculation results, WW elaborates on the research findings.

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