International Journal of Applied Economics, Finance and Accounting
ISSN 2577-767X
Vol. 22, No. 1, pp. 111-119
2025
DOI: 10.33094/ijaefa.v22i1.2286

Are Islamic Banks Resilient to Crises: New Evidence from the COVID-19 Pandemic Case of North African Countries

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Keywords:
Banking system
Fiscal finance
Economic Growth
Interest rate
Monetary policy

JEL Classification
E52; E44; F43; P44; G18.

Received: *19 February 2025*
Revised: *3 June 2025*
Accepted: *5 June 2025*
Published: *13 June 2025*
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Abstract

Islamic finance has gained increasing global investor attention, marked by a rise in assets in 2019. Despite market volatility from the COVID-19 outbreak, interest continues to grow, driven by its expansion into new geographic markets and digital transformation, which has enhanced accessibility to Islamic financial products. Hence, the purpose of this study is to explore the impacts of primary macroeconomic variables including GDP growth rates, national debt levels, consumer price fluctuations, lending rate shifts, foreign capital inflows, and external account balances on the performance of Islamic banks, measured by return on assets and return on equity. By applying the fixed-effects panel estimations, the study examines Northeast African countries, Algeria, Morocco, and Tunisia, over the period 2017–2022, taking into consideration the instability introduced by the pandemic. The findings indicate that most of these variables align positively with Islamic bank profitability, while large external financing inflows and chronic balance-of-payments shortfalls tend to depress returns, the study concluded an overreliance on outside funding. The study suggests that policymakers should consider targeted fiscal and monetary support measures and channel international investment through Islamic banking institutions to sustain and enhance their profitability.

Funding: This study received no specific financial support.
Institutional Review Board Statement: Not Applicable.
Transparency: The authors declare that the manuscript is honest, truthful and transparent, that no important aspects of the study have been omitted and that all deviations from the planned study have been made clear. This study followed all rules of writing ethics.
Data Availability Statement: The corresponding author can provide the supporting data of this study upon a reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.

1. Introduction

Islamic banks are considered as a key component of the global banking system. The system occurred to surface since the sixties, in Egypt and then start to spread massively around the world particularly during the 80's in different countries and different regions around the world such as Malaysia, Bahrain, Pakistan and Sudan, these countries did not only establish an Islamic banking system but some of the conventional banks were transforming into non interest banks and then pure Islamic banks (Yousfi, 2016). Lately, this type of banking system starts to occur in western economies however they are only limited to offer Islamic financial products using what is known as "Islamic windows" (Van Greuning and Iqbal, 2008).

By the end of 2019, the world had witnessed not only economic and financial crises but also health crises known as COVID-19 pandemic. These three crises affected negatively the economic, financial and social stability of most of the world economies, some of these effects that economist have observed include financial institutions failure, high inflation accompanied with high unemployment rate, more public debts, less production and growth, but the most worrying deduction is a rise in the poverty rate (Kotz, 2009). However,

on the other hand, some sort of positive effect has arisen on the surface that has benefited the Islamic banks. With the highly advanced technologies, revised regulation and the implantation of policies reform initiatives during and after these crises, the Islamic bank market has witnessed remarkable prosperity and growth. Along with the ease of intervention in the global market several countries have shown an interest in these categories of financial institutions since they realized that these banks' inclusion into the market can enhance the investment climate in the coming years (Al Sharif, 2023).

Moreover, in the Northwest African region known as the Arab Maghreb, particularly in Algeria, Morocco, and Tunisia, the banking sector in the economic activity, has been considered as one of its essential elements of growth and also it was and still is the major contributor of the services sector. However, this sector has faced several shocks that impacted on its performance and led to deep changes into the structure of it. Among these shocks are 2008, 2010 financial and economic crises and lately the Covid-19 health crises. In the meantime, the Islamic banks as one of the pillars of this sector, in this specific region "ARAB Maghreb" have been a key factor in trying to surmount those shocks thorough financing and investing in different economic activities. This type of contribution helped to enhance the role played by the Islamic banks in this region.

The global financial scene has undergone a profound change caused by the COVID-19 pandemic, exposing vulnerabilities in banking systems worldwide and triggering a reassessment of the role of alternative financial institutions. In this context, Islamic banks, with their distinct Sharia-compliant structures, have become a crucial point of interest, especially in regions where they coexist with conventional banking systems. Although Islamic banks have undergone extensive research on risk management and operational frameworks within them, there is still a critical gap in comprehending their financial resilience, robustness, and profitability in the midst of macroeconomic crises, especially in North African region. To tackle this deficiency or gap, this study utilizes a rigorous empirical analysis to assess the effect of macroeconomic factors—including "interest rates", "inflation", and "economic growth" on the performance of Islamic banks in Tunisia, Morocco, and Algeria throughout the health crises the COVID-19.

This study is centred around the primary research question: "*How did macroeconomic shocks, particularly those generated by the COVID-19 pandemic, influence the stability, profitability, and resilience of Islamic banks in North Africa*?" Furthermore, this study hypothesizes that Islamic banks exhibit unique resilience patterns because of their "profit-and-loss-sharing" (PLS) models and Eschewal of interest-based transactions, in comparison with conventional banks, particularly in volatile economic environments. The research's main contribution lies in investigating the genuine correlation between the interest rates and the Islamic banks profitability, addressing the broader question of whether these institutions can be viable alternatives for conventional banks during economic uncertainty. By analysing this connection, the study intends to uncover the potential of Islamic banking as a stabilizing force during period of financial turmoil.

This research is driven by the relative scarcity of empirical studies on Islamic banks financial performance in North Africa, a region characterized by its distinctive economic challenges and growing reliance on Islamic finance. While previous studies have predominantly concentrated on theoretical frameworks or risk analysis, this study adopts a data-driven approach to provide practical insights into the factors that impact Islamic banks' performance during crises.

By considering the COVID-19 pandemic as a naturally occurring experiment, it caused substantial disruptions to global and regional economies, including North Africa (Tunisia, Morocco, and Algeria). These disruptions represent a significant opportunity to test the resilience and stability of Islamic banks when faced with extreme macroeconomic stress. Additionally, the crisis was expected to be addressed differently by Islamic banks, which have distinctive financial structures such as "profit-and-loss sharing", and avoidance of "interest-based transactions", compared to conventional banks. This hypothesis can be empirically tested during the pandemic period. Therefore, the study pinpoints the dynamic interaction between macroeconomic shocks and banking stability, resulting in a timely contribution Within the discipline of Islamic finance and financial resilience.

This study's findings are anticipated to exhibit substantial insights for policymakers, regulators, and financial practitioners. This research will provide strategies to improve financial systems in North Africa and beyond by revealing the determinants that enhance the Islamic banks resilience and profitability. Furthermore, the study's investigation of "Islamic banks" as potential alternatives to "conventional banks" could lead to a more diversified and resilient financial ecosystem, able to endure future economic shocks. To sum it up, this research is not only enhancing academic understanding but also offering practical insights to ensure financial stability in a global economy that is becoming increasingly uncertain.

2. Literature Review

According to several studies, there are two methods that define the bank's profitability variable. The first alternative is known as the "profit to assets ratio" or commonly known as "return to assets" (ROA), which represents the capacity of the banks to yield a profit from their assets. As for the second alternative, "profits-to-equity ratio", or also known as "return on equity" (ROE), which defines the shareholders returns on their equities (Ali et al., 2018; Yousfi, 2016).

Most of the bank's profitability is affected by two main types of factors: microeconomic and macroeconomic. Microeconomic factors, like the banks size, how much capital it has, its liquidity, the quality of its assets, capital ratios, and the security it holds as collateral, are things that banks can generally control. On the other hand, the macro factors, according to Nemours studies, are the "gross domestic product", both interest rate and inflation rate. Other studies added the "money supply" as one of the critical factors that affect the banks' profitability along with the market competition. Lately with the climate change effect that rises on the surface, few studies added hydrocarbons as an element that may affect the banks' profitability (Combey and Togbenou, 2017; Hafizh et al., 2020; Lee, 2003).

Regarding the Gross domestic product's major impact on both the resilience and profitability of the "Islamic banks", Noor and Ahmad (2012) studied 78 Islamic banks in more than 25 nations and demonstrated ed that the "GDP" among other indicators has a positive effect on the financial performance of banks. In line with Yousfi (2016) study on the Jordanian Islamic banks and Alharbi (2017) study using panel data on Islamic worldwide, they found the same influence of the GDP on these banks' profitability outcome.

Literature extensively examines the significance of inflation and its impact on banks' performance. First and foremost, in Sukmaningrum et al. (2020) study, it acknowledged that inflation is the primary determinant of creating difference between the bank's profitability. Recent studies confirmed this conclusion and deduced that this factor has a favourable influence on the banks' efficiency by significantly impacting both financial resources and customers of these banks (Ali et al., 2018; Athanasoglou et al., 2008; Chowdhury, 2015). Nevertheless, another scholar has rejected such a conclusion and denied the existence of any link between inflation and these banks not only financial stability but also their profitability, as outlined in Derbali (2022) and Rashid et al. (2017).

Furthermore, in macroeconomic literature, the interest rate is considered as a variable that notably affects banks' profitability, as it has a noteworthy impact on both their demand and supply of credit (Ali et al., 2018). For instance, Minny and Görmüş (2017) observed that the interest rate and the financial profitability of the Turkish Islamic banks are positively correlated. Similarly, Drissi and Guerguer (2023) and Djelassi and Boukhatem (2024) studies all yielded the same result as the above scholars and they concluded that if the banks delay the adjustment of the interest rate, thus, these banks will face an increase in their expenses compared to their revenue. However, in other studies the interest rate impact was found to be negative on these banks profitability, such as the Šeho et al., (2020) study on the Islamic bank in Malaysia.

It is widely acknowledged in macroeconomic theories that a host nation with a strong financial banking system and low capital cost will certainly attract foreign investment or what is widely known as FDI which in return will help the host country to have large funds (Alzarooni et al., 2024; Dutta and Roy, 2011; Henry, 2000; Kholdy and Sohrabian, 2008). Building on the previously mentioned studies, Tabash and Dhankar (2014) conducted an investigation into Qatar's case employing the "Granger causality test" and the finding suggested that a unidirectional causality exists between "FDI" and "Islamic banks" profitability. Their conclusion was that the Islamic banks has incentivized the attraction of foreign investments to Qatar state. Additionally, another study has been conducted by Kalayci and Tekin (2016) regarding this relationship, targeting the Islamic banking system performance in Turkey. They concluded that foreign direct investment and Islamic banks have a bidirectional causal relation in the long run. Similarly, Tabash and Anagreh (2017) found identical outcomes in their investigation of UAE using a time series method. However, other studies have contradicted these findings and concluded that the relationship is negative, such as the study by Alzarooni et al. (2024) which examined six members of the "Gulf Cooperation Council (GCC)" region, from 2006 to 2021. And they suggested that the reason behind this effect could be due to political factors that have a direct relation to either both or one of the variables (Alzarooni et al., 2024). There is a lack of literature on the connection between the balance of payments, debt, and bank profitability, with only a few studies focusing on this specific relationship. These studies found that the balance of payment exerts a significant and positive influence. And they concluded that if the balance of payment increased this would result in an improvement in the "Islamic banks" not only financial performance but also an increase in the profitability (Al Sharif, 2023).

Concerning the public debts, they are considered as a key macro-level determinants that influence the banks' profitability. Some literature introduced them as "sovereign spreads" (Du et al., 2020; Guirola and Pérez, 2023). The study of Reinhart and Rogoff (2009) demonstrated that the government "debt-to-GDP" ratio rose after banking crises, primarily due to economic slowdowns rather than bailout costs. Similarly, Mody and Sandri (2012) affirmed the previous conclusion, and they asserted that the public debt mirrors the weaknesses of any banking system, and that if the public debts are high this may affect the banks' financial stability and profitability.

3. Materials and Methods

3.1. Methodology

In this paper we will opt for the Fixed effect methodology of the panel regression to analyse the effects of the Macro-level indicators on the "Islamic banks'" financial stability, profitability and resilience in times of financial and economic crises. The adoption of this Panel data approach was attributed to its advantages including providing detailed explanatory data and cross-sectional information. Based on the empirical theory;

by utilizing a panel regression approach, researchers can track the differences in variable characteristics and their changes over time. Another crucial reason for the employment of this approach is that it provides greater flexibility and efficiency, enabling a more in-depth examination of how macroeconomic factors impact the evolution of the financial sector. Thus, the fixed effects panel regression methodology offers robust, efficient, and flexible tools to explore the dynamic relationships between macroeconomic factors and Islamic banks' performance, ensuring reliable and significant insights for both academic and practical purposes.

3.2. Model Specification

The study Sample includes nine Islamic banks across three economies—Algeria, Morocco, and Tunisia—during the period from 2017 to 2021. Thus, to conduct the analysis, the following equation is applied.

$$"ROA_{it} = \alpha + \beta_1 (GDP_{it}) + \beta_2 (INF_{it}) + \beta_3 (IR_{it}) + \beta_4 (ER_{it}) + \beta_5 (FDI_{it}) + \beta_6 (BoP_{it}) + \beta_7 (PD_{it}) + \varepsilon_1" \quad (1)$$

$$"ROE_{it} = \alpha + \beta_1 (GDP_{it}) + \beta_2 (INF_{it}) + \beta_3 (IR_{it}) + \beta_4 (ER_{it}) + \beta_5 (FDI_{it}) + \beta_6 (BoP_{it}) + \beta_7 (PD_{it}) + \varepsilon_2" \quad (2)$$

In the above equations, the variables "i" and "t" denote the bank individuals, and the years, respectively. As for, "ROA" represents the "return on assets ratio" while the "ROE" represents the "return on equity ratio". And they represent the bank's profitability ratios, which are the dependent or target variables.

ROA "Return on Assets" demonstrates efficiency of attracting deposits at lower cost of a bank and turning them into profits through investments. When the "ROA" of a bank is high leads to higher bank profitability (Kumbirai and Webb, 2010). "ROA" is commonly acknowledged as a key indicator for assessing the profitability of banks. Peterson and Schoeman (2008) highlighted that "ROA" crucial instrument in evaluating the operational efficiency of a bank. Meanwhile, "ROE" as "Return on Equity" the returns generated for every dollar of equity contributed by banks owner (Kumbirai and Webb, 2010). It's a crucial indicator of the growth potential and profitability of a bank. The compute "ROE", include both the reserves and total capital (Khalil and Siddiqui, 2022). Therefore, capital utilization is more efficient when ROE is higher. As for the macroeconomic variables that represent the independent variables, they include GDP as "gross domestic product", INF as "inflation", IR as "interest rate", ER as "exchange rate", FDI as "foreign direct investment", BP as "balance of payments", and PD as "public debt". Finally, ε represents the error term.

The macroeconomic variables—"GDP growth", "inflation", "interest rates", "exchange rates", "foreign direct investment" (FDI), "balance of payments" (BP), and "public debt" (PD)—are selected based on theoretical and empirical relevance to "the Islamic Banks" financial resilience, stability and profitability. GDP growth is a reflection of economic activity, impacting demand for banking services and asset quality (Beck et al., 2013) while the real value of bank assets and liabilities is subject to inflation, particularly in long-term financing contracts (Almansour et al., 2021). Despite the fact that Islamic banks avoid interest-based transactions, their operations are impacted by interest rates by influencing customer behaviour and funding costs (Ali et al., 2018). For banks with foreign currency exposure, exchange rates are crucial as fluctuations can have an impact on profitability and financial stability (Lee and Brahmasrene, 2018). Economic openness and investor confidence are signalled by FDI, stimulating a surge in financing (Kalayci and Tekin, 2016) while the external economic stability is reflected in balance of payments, which is important for banks operating in open economies (Reinhart and Rogoff, 2009). Finally, public debt levels affect the level of "sovereign risk" and value of government securities held by banks (Reinhart and Rogoff, 2009). The broader economic environment and its influence on "Islamic banks", especially in time of crises such as the "COVID-19 pandemic", are collectively captured by these variables providing a comprehensive framework for analysing their performance.

3.3. Data Analysis

Table 1 presents the descriptive analysis of the data variables associated with "Islamic banks" in the three countries of the "Union du Maghreb Arabe". The data was obtained from the analysis results using Stata software.

Table 1. Descriptive analysis.

Variable	Mean	Std. dev.	Min.	Max.
ROA	-0.575	3.416	-14.795	3.059
ROE	0.136	19.860	-58.075	29.635
GDP	1.260	4.135	-8.818	8.021
INFLATIPON _CPI	4.518	2.820	0.303	9.266
Public_DEBT	53.667	11.324	27.200	72.200
INTEREST_RATE	3.683	2.055	1.500	7.670
FDI	1.375	0.690	0.039	2.783
BOP	-5.891	5.252	-12.974	9.762

Source: Author's' contribution via Stata.

The mean ROA is 0.57%, with a lowest rate of -14.79% and the highest rate of 3.05%. As for the ROE, the mean rate is 0.13%, with a lowest of -58.07% and the highest rate of 29.63%. Concerning macroeconomic variables, while the mean GDP growth rate is 1.25%, inflation rate averages 4.5%. The "GDP growth rate" spans from its lowest of -8.8% to highest of 8%, while the value of "inflation rate" extend from a lowest of 0.3% to a highest of 9.26%. Regarding the interest rate, the average is 3.68%, with a lowest of 1.5% and a highest of 7.67%.

According to Table 1, the descriptive statistics demonstrate that the public debt variable has the largest mean and standard deviation, suggesting that the spread of the data for this variable is substantial in relation to its average value, at 53.66%. Additionally, the highest value of public debt is beyond 72%, while the lowest is 27%. Finally, the average of "FDI" is 1.37%, and a minimum of 0.03% and a maximum of 2.78%. Based on "the dispersion statistics" results, the highest recorded value of payment balance is 9.76%, while the minimum value is 12.97% As observed through "Pearson's correlation coefficients" in Table 2, the correlation coefficient reached his highest at 0.599, which is notably under the permissible value of 0.8. This suggests the absence of a statistically significant relationship among the variables within the model.

Table 2. Correlation matrix.

Variables	GDP	INFLA_CPI	DEBT	INTEREST_RATE	FDI	BOP
GDP	*1*					
INFLA_CPI	*0.081*	1				
Public_DEBT	*0.010*	-0.348	1			
INTEREST_RATE	*-0.199*	0.464	-0.423	1		
FDI	*0.180*	-0.248	0.244	0.321	1	
BOP	*0.171*	0.075	0.599	-0.422	-0.230	1

Source: Author's' contribution via Stata.

4. Results and Discussions

4.1. Econometric Analysis

In this section, we will conduct two vital tests, the unit root and multicollinearity tests, which are used to assess the reliability of the data and the model being utilized. Starting with the unit test, in this paper we used the "Levin-Lin-Chu" test. Based on the Table 3, we concluded that at the 1% significance level, the unit root test rejects the assumption (H_0) of non-stationarity, suggesting that all variables are stationary at level throughout the study period

Table 3. Unit root test results.

Variable	T-statistic	Probability	Decision
ROA	-87.7716	0.0000	Reject H0*
ROE	-12.1117	0.0000	Reject H0
GDP	-5.5221	0.0000	Reject H0
INFLATIPON _CPI	-47.217	0.0000	Reject H0
Public_DEBT	-8.7134	0.0000	Reject H0
INTEREST_RATE	-99.5104	0.0000	Reject H0
FDI	-2.70E+02	0.0000	Reject H0
BOP	-22.5547	0.0000	Reject H0

Note: *H_0 : There is no unit root
Source: Author's' contribution via Stata.

As for the Multicollinearity, we applied the value of the "variance inflation factor" commonly known as "VIF" test is widely chosen for multicollinearity detection due to its convenience. This test is critical because it confirms that the regression estimation output is not biased. The test null hypothesis suggests the absence of multicollinearity issues between independent variables. Then, the rule of decision is if the VIF is less than 10 then we accept the null hypothesis. Thus, referring to the results in the Table 4, the value of "VIF" 3.02 is lower than 10. Therefore, this implies that multicollinearity is not present.

Table 4. Test results of multicollinearity "VIF".

Variables	VIF	1/VIF
Public_Debt	4.85	0. 206
BOP	3.62	0. 276
interest rote	3.09	0. 324
FDI	2.76	0. 362
Inflation_CPI	2.07	0. 483

GDP	1.75	0. 571
Mean VIF	**3.02**	

Source: Author's' contribution via Stata.

4.2. Model Validation Test

In this section, we will apply three diagnostic tests, The Hussman test, heteroskedasticity test, and autocorrelation test respectively, as the latter three tests are pivotal not only for validating the robustness but also for the adequacy of the model used in the research.

Two commonly statistically used models for "panel data analysis" are the "fixed-effect" and "random-effects" model. The 1st model assumes that unobserved heterogeneity is constant and that the effect size does not vary across units, and any variations in the observed effects result from sampling error. Though referred to as a fixed-effect model, it might be more accurately called a common-effect model, as it assumes one true effect size.

Conversely, the "random-effects" model allows for variations in true effect sizes, recognizing that while some studies may share a common effect size, others may exhibit variations (Borenstein et al., 2010). It's crucial to choose the appropriate model, as it affects both the calculations, the analysis goals and the interpretation of the results (Borenstein et al., 2010).

To determine the appropriate specification between both models' effects, researchers commonly employ the Hausman test. Under the "null hypothesis", the "random effects" model is assumed to be consistent and efficient, while the "fixed effects" model is favoured under the alternative hypothesis. The test evaluates whether the individual-specific effects are correlated with the explanatory variables—if such correlation exists, "the random effects" estimator becomes inconsistent, thus justifying the use of "fixed effects" (Benfratello, 2024; Dayal and Murugesan, 2023).

Thus, referring to the Table 5 of the "Hausman test" "Stata 17" output, we conclude that we should refuse the "null hypothesis", suggesting that the appropriate model is "Fixed Effects".

Table 5. Hausman test results.

Regression equation	Chi 2 statistics	P value	Decision (1)
Roa	4.77	0.0921*	Reject H0
Roe	11.6	0.0039***	Reject H0

Note: ((1)H0: model adopted is random effects.
*** p<0.01, * p<0.1.
Source: Author's' contribution via Stata.

To account for heteroskedasticity and autocorrelation in the dataset, various approaches were applied, including the "Wooldridge test" for detecting autocorrelation and the "Wald test" to assess the presence of group-specific heteroskedasticity within a "fixed effects" framework

The Table 6 shows that heteroskedasticity is present. To enhance the quality and reliability of our results, we applied feasible generalized least squares to correct this issue.

Table 6. Test results of *heteroscedasticity* and autocorrelation.

Equation/ model rank	Regression	Heteroscedasticity			Autocorrelation		
		Chi2	P value	Decision[a]	F (1,8)	Prob>F	Decision[b]
1	ROA	105.37	0.000***	Reject H0	2.425	0.1580	Accept H0
2	ROE	3761.81	0.000***	Reject H0	3.598	0.0944	Accept H0

Note: (A) H0 : homoscedasticity.
(b) H0: no serial correlation.
*** p<0.01.
Source: Author's' contribution via Stata.

4.3. Regression Analysis Results and Discussion

After reviewing the regressing analysis outcomes detailed in Table 7, we found that The findings exhibit consistency with respect to significance and effect for both profitability ratios. The regression results table below (Table 7) shows that most of the macro level variables including "economic growth", "inflation rate", "interest rate" and "public debt" have statistically positive significant effect on performance, except for "foreign direct investment" and balance of payments, which have a substantial but negative effect on profitability ratios. These findings result in five major observations, even during the three distinct stages of the COVID-19 pandemic crisis (pre, during, and post).

First, as mentioned previously, the GDP which reflects the economic performance of the nation has a statistically significant positive influence on the profitability of the "Islamic bank's ratios. This founding is consistent with the results reached by Noor and Ahmad (2012); Yousfi (2016) and Alharbi (2017).

Second, we concluded that elevated inflation rates compel businesses, including banks, to raise their product and service prices in order to counteract the effects of demand downturn, which can substantially lead

to decrease in sales and, consequently, diminished returns. In contrast, a low inflation rate allows consumers to buy goods and services at more affordable prices. This finding is consistent with the conclusions drawn by Chowdhury (2015).

Thirdly, the findings reveal that Islamic bank financing is not detached from interest rates; rather, it is greatly influenced by them. This is a noteworthy observation as Islamic bank financing should function independently of conventional interest rates, at least theoretically. Additionally, there is evidence indicating that the stock market has an impact on Islamic bank financing. These results match the conclusions drawn by O'Sullivan (2015) in their book, "*The Philosophy, Politics, and Economics of Finance in the 21st Century: From Hubris to Disgrace*", where they state, "*It is far too easily reductionist to say that all Islamic finance is but a Western interest-based system in disguise*" (p. 88). The credible nature of these findings leads to substantial policy implications for developing nations, particularly the Arab Maghreb countries.

Fourthly, these findings suggest that rising public debt and interest rates signal an economic recovery that could enhance the demand for banking services. This increase is likely to occur through project development and a heightened demand for Islamic assets facilitated by instruments such as "Murabaha", "Mudaraba", "Musharaka", "Ijara", and other products related to Islamic finance. This result was confirmed in the study of Abdelkafi (2018) and Jacobs et al., (2020) in which he suggested that Islamic banks, implicitly, perform better in such circumstances.

Finally, an increase in a nation's balance of payments or foreign direct investment suggests the use of foreign capital for investment. This influx of investment may compete with domestic investments, leading to a decreased demand for bank assets. To address this situation, it is essential to encourage citizens to seek bank assets through instruments such as "Murabaha", "Mudaraba", "Musharaka", "Ijara" (leading to eventual asset ownership). When banks lower their returns on assets and equity, it results in a decline the level of the "Islamic banks" performance. These results were validated by several scholars including Almansour et al. (2021); Widarjono et al., (2021); Lee and Brahmasrene (2018); Combey and Togbenou (2017) and Lee (2003).

Table 7. GLS regressions results.

Variables	GLS	GLS
	ROA	ROE
gdp	0.0519**	0.650***
	(0.0227)	(0.216)
infla_cpi	0.245***	1.486***
	(0.0502)	(0.317)
debt	0.0796***	0.509***
	(0.0160)	(0.138)
interest_rate	0.114**	2.015***
	(0.0575)	(0.746)
fdi	-2.100***	-15.59***
	(0.226)	(1.662)
bop	-0.415***	-2.613***
	(0.0346)	(0.543)
Constant	-5.795***	-37.45***
	(1.042)	(10.55)
Observations	54	54
Number of id	9	9

Note: "in parentheses are the Standard errors".
*** p<1%, ** p<5%.
Source: Authors' contribution via Stata 17.

5. Conclusion and Managerial Implications

This study investigated the financial resilience and profitability facing global economic crises using critical macroeconomic factors in Northwest African countries, specifically Algeria, Morocco, and Tunisia, from 2017 to 2021. This period is critical as it encompasses the time before, during, and after the COVID-19 pandemic.

To do so, we applied the fixed effect method for panel regression approach. The results demonstrated that economic growth as "GDP", interest rate, public debt and inflation positively influence the profitability ratios of the "Islamic banks", while the foreign investment along with the balance of payment variables showed that this factor negatively effects their performance and stability.

This research offers diverse practical insights for regulators, policymakers, and Islamic banking professionals. Government and regulatory bodies must identify alternative resources to stimulate the economy and establish a profitable financial framework. Additionally, decision-making authorities within "Islamic banks" should devise adaptable and lucrative price-setting approaches in times of elevated price level known as inflation rate.

For instance, as discussed in the 2014 International Monetary Fund (IMF) report, policymakers could initially Establish special "windows" related to "Islamic finance" inside the traditional banking organization and promote the issuing of sukuk to attract foreign investors. Similarly, the IMF's recommendations align with the policy implications by O'Sullivan (2015) regarding Islamic banks and finance. They concluded that Islamic finance offers solutions that could prevent future financial bubbles and crises, similar to the 2008 crisis. this is in alignment with the doctrinal principles and practical applications of "Islamic finance", which have main assets in terms of both efficiency and ethics, making them worth considering alongside Western financial products.

Likewise, we fully endorse Al Sharif (2023) recommendation, which calls for the government to implement whether an expansionary monetary policy or/and fiscal policy. He also proposed to encourage overseas investors to utilize "Islamic banks'" resources in to finance their investments in order to enhance their regional performance.

Overall, our conclusion aligns with the outcomes of O'Sullivan (2015) which suggest that Islamic finance can provide valuable insights for creating a new financial sector that is not only efficient but more ethical. Although, it possibly will not completely prevent financial crises and economic downturns, it can reduce their likelihood and lessen their impact through risk-sharing.

To conclude, the findings of this study hold substantial implications and useful insights for financial economists' researchers, foreign and domestic investors, and lastly, decision-making authorities as policymakers who have a stake in North African economies and stock markets. Subsequent research could build upon this research paper by incorporating additional factors that have a substantial impact on the "Islamic banks" performance.

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