

OPTIMIZING ISLAMIC BANK PERFORMANCE FOR UNLOCKING PATH OF PROFITABILITY

Hussein Mkiyes

University of Economics in Bratislava, Bratislava, Slovak Republic

This study investigated the impact of some investment fund ratios in Islamic banks operating in Syria, represented by both the financing-to-deposits ratio FDR and the resource investment ratio IRR, in addition to the liquidity ratio, on the profitability of these banks, represented by ROA and ROE. In addition, this study aimed to identify the reality of the financial performance of Syrian Islamic banks according to these indicators and clarify the extent to which there are significant differences between them. This was done during the period from 2010 to 2022, based on the annual financial statements published in the annual financial reports issued by the banks under study.

The study found that there were significant differences in the performance of the Syrian Islamic banks studied regarding indicators of fund investment. While the performance of these banks was similar in terms of indicators of profitability and liquidity, there were no significant differences between any of them. The study also concluded that there is a positive and significant effect of FDR and IRR on ROE overall, compared to the absence of any significant effect of these two indicators on ROA. There is no significant effect of the liquidity ratio on ROA or ROE overall.

Keywords: profitability; liquidity; investment of funds; Syrian Islamic banks

Introduction

Indicators of fund investment in the banking sector in general and the Islamic sector in particular are among the most important indicators of the bank's ability to meet its obligations, its distance from default, and the quality of investing these funds. While investment in funds contributes to increasing the profitability of banks, it goes beyond that to contribute to financing economic sectors more efficiently.



Hussein Mkiyes

University of Economics in Bratislava, Faculty of National Economy/ Department of Economic Theory

Research interests: impact of fiscal council on fiscal stability in the EU, role of fiscal councils in achieving economic growth and financial discipline, role of fiscal councils in improving performance in the preparation of the state budget, comparative analysis of the structure of decisions of fiscal councils in V4 on fiscal policy

E-mail: hussein.mkiyes@euba.sk

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At the same time, liquidity is the basic means and the backbone of the work carried out by banks, as the bank needs to have enough liquidity due to the uncertainty that characterizes its cash flows, but high levels of cash and the presence of a surplus in it will lead to the loss of opportunities to invest this surplus. Consequently, profits are lost, and on the other hand, a drop in liquidity levels below the required level will lead to a defect in the bank's work and expose it to the risk of non-payment and the ability to fulfill its obligations to depositors on time, and thus this will lead to damage to the bank's reputation, which will affect its profitability in the future.

Profitability is one of the main goals that banks seek to achieve, and it is not possible for any bank to continue doing its business without achieving profits. Here the problem arises in the conflict between liquidity and profitability (Bakkeri & Malik, 2020; Boujmaa & Elorabi, 2020), which all banks, including Islamic banks, seek to solve by achieving optimal use of available financial resources. It meets the needs of its customers and maximizes profits. Given the lack of studies on Islamic banks and the new work of these banks in Syria, and based on fundamental differences between the work of these banks and traditional banks, which are represented in the following points: (Abu-Munes, 2020)

The adoption of Islamic banks in mediation based on participation through jurisprudential rule is the gain by the loss.

The investment nature of financing formulas in Islamic banks, which are concerned with the feasibility of the investment's legitimacy, compared to the commercial nature of their traditional counterparts, which are concerned with financial guarantees.

The economic and social dimension of Islamic banks results from eliminating the contractual cost of investment due to the interest element, as well as directing financial resources according to considerations of justice and efficiency, which are considered conditions for Islamic finance.

Therefore, this study sought to measure the impact of some indicators of investment and liquidity on the profitability of Islamic banks operating in the Syrian Arab Republic during the period extending from 2010 to 2022. It also sought to answer the following two questions:

Do Islamic banks operating in Syria differ among themselves in terms of indicators of investment and liquidity?

How do the indicators of investment in funds affect the profitability of Islamic banks operating in Syria, considering the restrictions imposed by the nature of the work of Islamic banks?

Based on the research problem, the research objectives are the following:

Analyzing the financial development of the Islamic banking sector in Syria during the studied period in terms of some indicators of profitability, liquidity, and investment of funds, and determining the significance of the underlying differences between them.

Measuring the impact of liquidity ratio, facilities to deposits ratio, and resource investment ratio on the profitability of Islamic banks is measured by return on equity and return on assets.

Three Islamic banks operate in Syria, which were established in accordance with the provisions of Decree No. 35 of 2005 (Legislative Decree No. 35 of 2005 in Syria, n.d.) and listed on the Damascus Securities Exchange.

The National Islamic Bank, which is currently under establishment, was recently added to them. The following is a list of the names of these banks, their capital, number of shares, and work start date shown in Tab. 1.

Table 1 - Islamic banks operating in Syria

(Source: Prepared by author using Syrian Commission of Financial Markets and Securities)

Bank name	Bank code	Number of shares	Work start date	The capital is in billions of Syrian pounds
Syrian Islamic International Bank	SIIB	15,000,000	2007/9/15	15
AL-Baraka Bank	BBSY	150,000,000	2010/6/14	15
Cham bank	CHB	90,000,000	2007/5/23	9
National Islamic bank	NIB	250,000,000	Under establishment	25

Literature review and hypotheses development

Most previous studies focused on comparing the financial performance of Islamic and traditional banks, such as Raouf (2018), which showed the existence of significant differences between traditional Islamic banks operating in Arab Gulf countries (GCC) in terms of financial performance, financial stability, and risk management, and Milhem & Istaiteyeh (2015) which showed the existence of significant differences in financial performance between conventional banks and their Islamic counterparts in Jordan.

Likewise, Shahrai (2017) also confirmed the existence of significant differences between the performance of Islamic and conventional banks operating in Algeria.

Sulub & Che Mohd Salleh (2019) also reached results similar to those of previous studies, as they showed that there are significant differences between performance indicators of Islamic and conventional banks operating in Malaysia, whether in terms of profitability indicators or debt ratio.

In contrast to the above, Hasan (2019) found that there were no significant differences between the financial performance indicators of Syrian traditional and Islamic banks related to liquidity, profitability, investment of funds, and market. The researcher explained this result for a number of reasons, the most important of which are the policies and procedures of the Central Bank regulating the work of Syrian banks, which are similar to a certain extent. This makes the performance of these banks very similar due to the similarity of their operating conditions in terms of their ability to invest funds, grant facilities, and maintain specific percentages of liquidity.

This result was supported by Aldeen et al. (2020), who confirmed the absence of significant differences between some financial performance indicators of Syrian Islamic and traditional banks.

There are also many studies that examined the determinants of profitability of Islamic banks using different variables and multiple ratios in different countries (Alzoubi, 2018; Belkhaoui et al., 2020).

Among these studies, only one was applied to Syrian Islamic banks (Albeig, 2020), which investigated the effect of a group of variables, including liquidity ratio measured by liquid assets to total assets, on the profitability of banks represented by ROAA and ROAE.

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This study concluded that there is a positive but insignificant effect of the liquidity ratio on the two profitability indicators under study. Another section of studies focused on making comparisons between the performance of Islamic banks, whether in a single country (Basri, 2016) or between several Islamic banks in several countries (Al-Sabawy, 2011; Raouf, 2018).

However, in our research, we focused on measuring the impact of investment fund ratios and liquidity ratios on the profitability of Syrian Islamic banks. Especially since there are only a few studies that have studied this outside Syria, there is no study applied to Syrian Islamic banks. We tested the extent to which the performance of the studied banks varies according to these indicators during the study period.

H1: There are significant differences in the performance of Syrian Islamic banks in terms of profitability, liquidity, and investment.

Mukhibad et al. (2017) study, which was applied to Islamic banks operating in Indonesia, showed that there was a significant effect of the financial deposit ratio (FDR) on ROE, while this effect was not significant on ROA.

While Chenini & Sidamor (2021) were limited to evaluating the performance of one of the Islamic banks operating in Algeria in terms of some ratios of investment and liquidity.

H2: Ratios of investment in funds have a positive and significant effect on the profitability of Syrian Islamic banks.

Liquidity

The results of studies that dealt with the impact of some liquidity indicators on the profitability of Islamic banks varied according to the banks to which the study was applied and the ratios used to measure these indicators.

Boujmaa & Elorabi (2020) found that there was a positive and significant effect of some liquidity ratios (ratio of ready cash to total assets) on ROA and ROE in a group of 10 Islamic banks operating in five countries.

Dolgun & Mirakhor (2021) showed that there is a direct and positive relationship between liquidity and profitability indicators studied. Also, Hassan & Ahmed (2019) illustrated that the liquidity ratio has a positive effect on the profitability of Islamic banks in Bangladesh, represented by the ROA.

Contrarily, Bakkeri & Malik (2020) showed that there is a negative and significant effect of the liquidity ratio on the bank's profitability, represented by ROA.

Similarly, Hacini et al. (2021) showed that the ratio of cash to deposits and the ratio of loan to deposit negatively affect the bank's performance indicator, represented by ROE. On the other hand, Elgadi & Yu (2018) showed that there is a direct and positive relationship between liquidity and profitability under study indicators.

H3: The liquidity ratio has a negative and significant effect on the profitability of Syrian Islamic banks.

Data description and methodology

The following section outlines the data description and methodology employed to investigate the intricate relationship between investment fund ratios and the profitability of Islamic banks in Syria.

This study delved into the impact of key metrics such as the financing to deposits ratio (FDR), resource investment ratio (IRR), and liquidity ratio on the banks' profitability indicators, namely return on assets (ROA) and return on equity (ROE). Spanning from 2010 to 2022, this analysis relied on the meticulous examination of annual financial statements gleaned from the comprehensive reports released by the banks under scrutiny. The research sought not only to unravel the financial performance of Syrian Islamic banks but also to discern any discernible disparities among them based on these pivotal indicators. The findings underscored notable distinctions in the performance of these banks concerning their investment fund metrics, whereas similarities emerged in their profitability and liquidity indicators.

Moreover, the study's results revealed a noteworthy positive correlation between FDR, IRR, and ROE, contrasting the absence of a significant impact on ROA. Interestingly, the liquidity ratio did not exhibit any substantial influence on either ROA or ROE across the board. This section elucidates the methodologies utilized to unravel these intricate relationships and interpret their implications for Islamic bank performance in Syria.

Data description

To achieve the research objectives and test its hypotheses, a set of variables was chosen that express each of the banks' profitability, liquidity, and investment in fund indicators. Tab. 2 shows the names of these variables, their classification, and references that were used to choose measures of the required indicators:

The data was collected on an annual basis, relying on the annual reports and financial statements of Syrian Islamic banks, the study sample, during the study period of 2010–2022.

Table 2 – Variables description
(Source: Prepared by the author)

Variable	Symbol	Classify of Variable	References used
Return on assets	ROA	Profitability Indicator (Dependent)	Ahmed & Ahmed,2020; Aldeen et al., 2020; Bakkeri & Malik, 2020; Hosen et al.,2019; Mukhibad et al., 2017
Return on equity	ROE	Profitability Indicator (Dependent)	Abdullahi &Yusuf, 2022; Hacini et al.,2021; Ijaz et al., 2015; Mukhibad et al., 2017; Swan, 2019
Liquidity ratio	LIQ	Liquidity indicator (Independent)	Bakkeri & Malik, 2020; Chenini & Sidamor, 2021
Financing to deposits ratio	FDR	Investment of fund indicator (Independent)	Aldeen et al., 2020; Chenini & Sidamor, 2021; Hosen et al., 2019; Mukhibad et al., 2017
resource investment ratio	IRR	Investment of fund indicator(Independent)	Hasan, 2019; Sakhrai, 2017

Profitability Indicators: two indicators were used to measure profitability in Islamic banks:

- Return on assets (ROA): This ratio is used to measure the efficiency of a bank in generating profits from assets it owns. This ratio is considered one of the most widely used

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ratios for measuring the financial performance of banks, and it is calculated using the following formula:

$$\text{ROA} = \text{net profit after tax} / \text{total assets}$$

ROA indicates how a bank converts its assets into earnings; a higher ratio is an indicator of better performance. The higher percentage indicates the efficiency of the bank in generating profits from its assets.

- Return on equity (ROE): This ratio is used to measure the efficiency of the bank in generating profits from its own funds. It is calculated by the following formula:

$$\text{ROE} = \text{net profit after tax} / \text{total equity}$$

The higher percentage indicates the efficiency of the bank in generating profits from its own funds.

In both of the above ratios, a higher ratio shows that a bank is cost-efficient and can generate higher profits with a given expense.

Investment of fund indicators: after reviewing the literature on indicators of investment of funds in Islamic banks, it was found that there are two common ratios in most of this literature. These two ratios are classified in some of this literature as activity indicators when evaluating the performance of Islamic banks. They are:

Financing to deposits ratio (FDR) = $\frac{\text{deferred sales receivables and net financing activity balances}}{\text{customers' current account balances} + \text{unrestricted investment accounts}}$

Resource investment ratio (IRR) = $\frac{\text{deferred sales receivables and financing activities balances, net} + \text{real estate or financial investments}}{\text{deposits} + \text{total equity}}$

Liquidity indicators: liquidity ratio refers to a bank's ability to meet withdrawal requests and pay periodic and other dues owed by the bank without resorting to selling securities or resorting to high-cost sources of funds. The Syrian Monetary Council defined liquidity as the extent of the bank's ability to fulfill obligations and finance the increase in assets without having to liquidate assets at unfair prices or resort to high-cost sources of funds (Syrian Credit Monetary Council Resolution No. 588, dated 11/22/2019). Liquidity in Islamic banks consists of cash and quasi-cash assets, as follows (Faour, 2019):

-Cash assets: This is the ready cash that is at the disposal of the bank, allowing the bank to control it how and when it wants. The cash flow consists of:

-Cash in fund: It is cash that banks own in local and foreign currencies in their funds, but banks must strive to reduce their cash balances to the extent that they can meet their banking obligations towards others.

-Cash deposits with the Central Bank: The Central Bank instructs all banks to deposit part of their cash liquidity in the Central Bank, which is known as the mandatory cash reserve. It is known that the Central Bank does not pay any return to the banks on its cash reserves.

-Cash deposits with local banks: Banks deposit cash with local banks for clearing operations between them, so that the more the bank's work and activity expands, the more its deposits with other banks increase. It is also noted that more banks have problems operating their surplus cash, so they increase their deposits.

-Cash deposits with foreign banks abroad: Banks often deposit cash with correspondents abroad to facilitate foreign remittances and documentary credit operations, according to monetary policy and procedures permitted in both countries.

-Checks under collection: Banks often have checks deposited with other banks that have not yet been collected.

-Semi-cash assets: They are assets that a bank can dispose of quickly, whether by selling or mortgaging them, such as all kinds of sukuk. These assets are characterized by their short maturity dates. One of the advantages of quasi-cash liquidity is that it absorbs the surplus of cash for the Islamic bank's needs and contributes to achieving a return for the Islamic bank. The quasi-cash liquidity must be carefully monitored because it is the latent repository of cash in a bank, which ensures the availability of sufficient cash when needed to meet the bank's obligations when they become due. Conversely, the funds of Islamic banks are used in many and varied fields by banks.

Among these uses are the following:

- The cash in boxes and vaults of Islamic banks

- Balances deposited with other banks, whether local or foreign, and cash reserves at the Central Bank

- Securities portfolio: which consists of common shares of companies and institutions in which an Islamic bank invests its money? The stock portfolio also includes the investment portfolio's sukuk.

- Specific investment accounts: the amounts deposited by investors in Islamic bank with the intention of investing, but within certain determinants in investment fields determined by investor based on speculation contract in specified manner, where investor authorizes Islamic bank to invest amounts deposited with him in investment operations and within agreed period. The allocated investment account remains in place until the investment is liquidated and results are extracted, whereby the profits are shared between the investor and the Islamic bank and the losses are borne by the investor, except in cases of infringement and default by the Islamic bank.

- Qardul Hasan is based on the principle of social solidarity (Takaful), which is a sum of money that the Islamic bank lends to the borrowing entity without profit or interest, provided that the borrower returns it without increasing its conditions. The reason for Qardul Hasan can be to relieve the hardship of an individual or a company, and it can be for treatment and education, or to help farmers, craftsmen, and workers start their work, which reflects a new productive capacity that benefits the community.

- Direct investments: This means that the Islamic bank invests the funds themselves, where in this case it is the speculator and depositors are the owners of the funds, according to the speculation contract between it and the depositors. When it comes to direct investment, an Islamic bank owns, invests in, and manages projects, but it must have enough experience and skills that enable it to fully carry out direct investment. Otherwise, it must seek the assistance of whomever it deems appropriate from specialists, experts, and technicians who study the feasibility of these projects and see that there is no It violates the provisions of Islamic Sharia, and they determine the extent of its contribution to economic and social

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development. It is not optional for Islamic banks to engage in direct investment because Islamic banks differ by the nature of their structure from other commercial banks that can trade in funds. Rather, they are investment banks whose goal is always investment, development, and activating small savers and small-scale professionals.

- Indirect investments: that the Islamic bank engages with people, whether natural or legal, by establishing new projects or participating in existing projects. This is the prevailing form for most Islamic banks, and indirect investment includes more than one form such as Mudaraba, Musharaka, Istisna, and other forms (Kettell, 2011).

So, if the banks cannot predict the size of withdrawals and the movement of incoming and outgoing funds as well, they have only developed financial indicators for liquidity that they use to always be aware of their position in relation to liquidity so that they do not fall into unnecessary problems and crises.

There are many financial indicators used to measure bank liquidity. This research used one of them, as follows:

Liquidity ratio = liquid assets containing cash and balances with central banks / total assets

To test the first research hypothesis that there are significant differences in study indicators between studied banks, the test for equality of means was employed for study variables. Before starting to estimate the required models to test the second and third research hypotheses, there are previous preliminary tests that help in choosing the correct methodology for estimating these models.

The first test performed is to estimate the correlation matrix to ensure that there is no high linear correlation between independent variables, which may generate a multicollinearity problem in the models.

The second step was testing for the existence of cross-sectional dependence in the panel using the Pesaran cross-sectional dependence test and three other tests.

A rejection of the null hypothesis of cross-sectional independence would indicate cross-sectional dependence among panels.

The next test that was applied was the stationarity test of panel series based on the Phillips-Perron Fisher unit root test, considering the cross-sectional independence of variables, whereas previous tests showed the presence of cross-sectional independence between their individuals (Barbieri, 2005; Maddala & Wu, 1999).

Based on previous test results, the optimal methodology for estimating the study models is the cointegration methodology using autoregressive distributed lags (ARDL). This methodology allows estimating the effect of independent variables on dependent variables in both long and short runs, and it is considered appropriate if the series of study variables are stationary at various levels $I(1)$ and $I(1)$.

In addition, the ARDL model has a straightforward error correction interpretation, is estimable by OLS, can handle serial correlation through the selection of an appropriate lag order, and can provide consistent estimates of the long-run parameters, even if the explanatory variables are weakly endogenous (Cho et al., 2023).

Therefore, in this research, the ARDL model was used to estimate the following four study models:

$$ROA_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 FDR_{it} + \varepsilon_{it}. \quad (1)$$

$$ROE_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 FDR_{it} + \varepsilon_{it}. \quad (2)$$

$$ROA_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 IRR_{it} + \varepsilon_{it} \quad (3)$$

$$ROE_{it} = \beta_0 + \beta_1 LIQ_{it} + \beta_2 IRR_{it} + \varepsilon_{it} \quad (4),$$

where β_0 represents the constant, β_1 and β_2 are regression parameters for liquidity ratio and investment of fun ratio, respectively, and ε_{it} is random error.

$i=1,2,3$ represents banks

$t=1,2,\dots,13$ represents years

Results and discussion

Tab. 3 presents descriptive statistics of indicators of profitability, liquidity, and investment in Syrian Islamic banks over the period from 2010 to 2022. ROA has an average value of 0.024 and varies between -0.045 and 0.082, with a standard deviation of 0.026. ROA follows a normal distribution based on the results of the Jarque-Bera test, so the null hypothesis was accepted.

This ratio tells us about the overall profitability of Islamic banks. ROE has an average value of 0.211 and varies between -0.108 and 0.588 with a standard deviation of 0.195. ROE is normally distributed according to the results of the Jarque-Bera test. FDR has an average value of 0.581 and varies between 0.129 and 1.352; it also follows a normal distribution. IRR has an average value of 0.436 and varies between 0.109 and 1.041; it is normally distributed. Both average values of FDR and IRR are low, which indicates the presence of idle funds that the Islamic banks have not invested. LIQ has an average of 0.243 and varies between 0 and 0.474. This tells us that liquidity is important in Islamic banks. Like previous variables in this study, LIQ follows a normal distribution.

Table 3 - Descriptive statistics
(Source: authors' computations depended on EViews outputs)

	ROA	ROE	FDR	IRR	LIQ
Mean	0.024590	0.211486	0.581889	0.436168	0.243625
Median	0.019929	0.170740	0.546378	0.428498	0.233327
Maximum	0.082247	0.588489	1.352919	1.041041	0.474904
Minimum	-0.045346	-0.108651	0.129388	0.109193	0.000460
Std. Dev.	0.026006	0.195091	0.323201	0.239140	0.108499
Jarque-Bera	0.039108	2.105917	2.908240	4.491311	0.246113
Probability	0.980636	0.348904	0.233606	0.105858	0.884214

When testing the existence of significant differences between average values of profitability, liquidity, and investment of fund indicators among the Syrian Islamic banks shown in Tab. 4, it was revealed that these differences exist in each of the investment of fund indicators (FDR, IRR), compared to the absence of these differences in indicators of profitability and liquidity. This can be explained by the fact that the investment in CHB was concentrated in real estate investments, compared to smaller investments in financing activities represented by various forms of Islamic financing.

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While SIIB went to focus on investing its fund in financial investments and financing activities, especially at the beginning of 2018, as for BBSY, its policies were more inclined to invest its fund in financial and real estate investments, but with a much lower degree of concentration than CHB, as shown in Figs. 1 and 2.

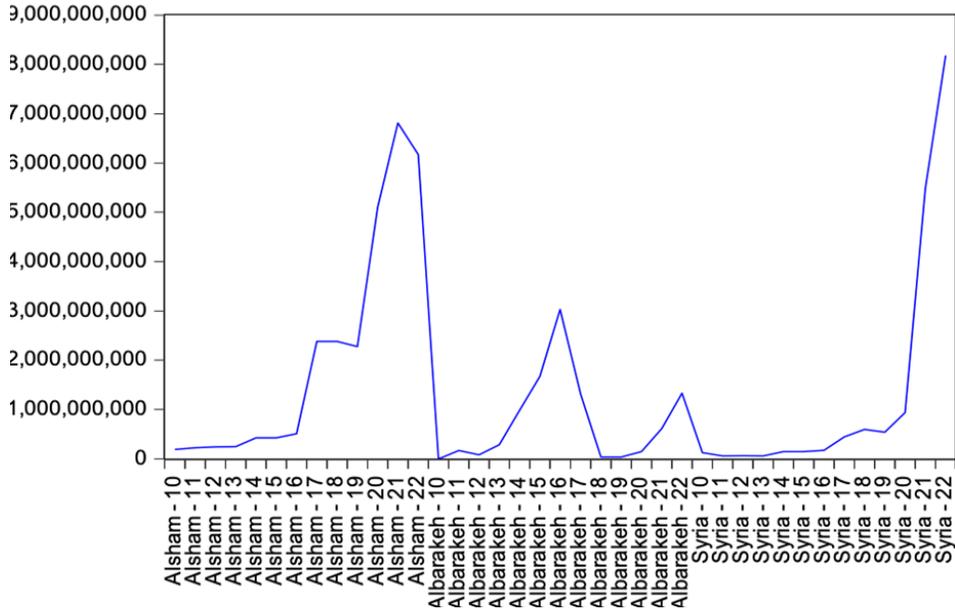


Figure 1 - Development of real estate and financial investments in Syrian Islamic banks
(Source: Collected by the author's output of EViews vs. Stata)

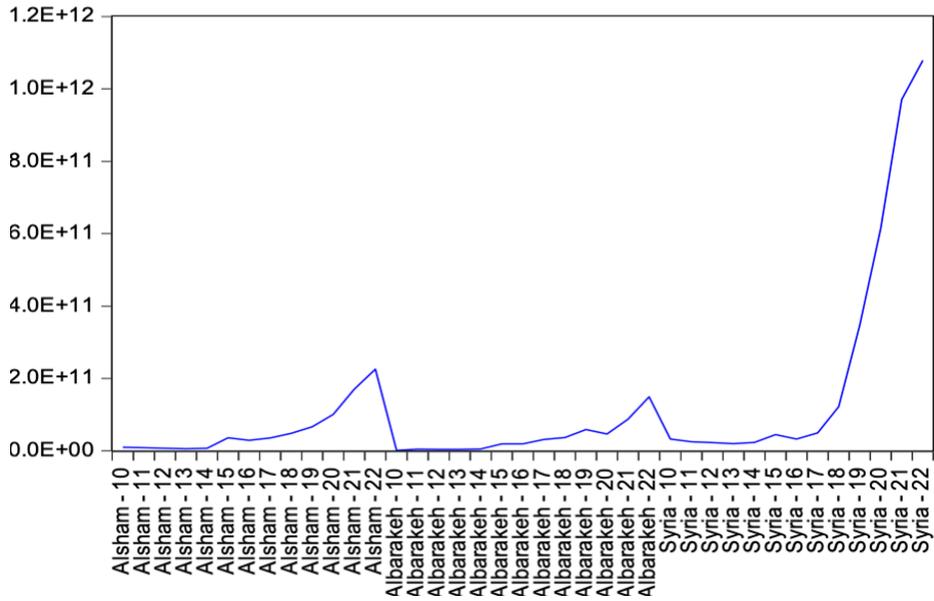


Figure 2 - Development of financing activities in Syrian Islamic banks
(Source: collected by the author's output of EViews vs. Stata)

As a result, the first research hypothesis, H1, that there are differences in performance indicators of Islamic banks operating in Syria, is partially accepted.

Table 4 - Results for quality of means
(Source: Collected by the author's output of EViews vs. Stata)

Method	ROA	ROE	LIQ	IRR	FDR
AnovaF-test	0.793884	0.171866	1.838432	13.773***	9.869***
WelchF-test*	0.996458	0.164636	2.010478	23.45***	10.131***

***, **denote the 1% and 5% levels of significance, respectively

Tab. 5 shows the value of the mean for each variable in each bank separately, and from it we conclude that CHB had the highest average financing to deposit ratio, followed by SIIB and finally BBSY. However, SIIB achieved the highest average for resource investment ratio, followed by CHB with a slight difference, and then BBSY.

As for the rest of the variables, their mean values were remarkably close, and this was confirmed by the results of the test of equality of means.

Table 5 - Values of means for study variables for each bank during the study period
(Source: Collected by the author's output of EViews vs. Stata)

BANKS	Means				
	ROA	ROE	LIQ	FDR	IRR
BBSY	0.026	0.238	0.227	0.327	0.216
CHB	0.030	0.200	0.215	0.782	0.544
SIIB	0.017	0.197	0.289	0.637	0.549
All	0.025	0.211	0.244	0.582	0.436

Moving on to test the last two research hypotheses, a set of models was estimated, each of which explains the effect of indicators of investment and liquidity on the profitability of Islamic banks, measured by ROA at one time and ROE at other times.

Due to the strong linear correlation between two indicators of investment (FDR and IRR), as shown in Tab. 6, their impact on the profitability indicators of Islamic banks was estimated in two separate models, each of which contains one of these two indicators to avoid the emergence of the problem of multicollinearity in the estimated models.

Tab. 7 results refer to rejecting the null hypothesis of cross-sectional independence for some variables (ROA, ROE, and IRR) and accepting it for others (LIQ, FDR).

Therefore, a unit root test will be applied to the panel series considering these results.

The results of the stationarity test for the studied variables (inserted in Tab. 8) showed that they were all stationarity at the level except for FDR, which was stationarity at the first difference.

Tab. 9 shows the results of estimating study models in the long run, which showed the presence of a positive, but insignificant, effect of LIQ on the profitability of Islamic banks, represented by ROA, compared to the presence of a negative, but also insignificant, effect of this ratio on the profitability of banks, represented by ROE. This result is consistent with the result reached by Albeig (2020) that there is no significant effect of liquidity ratio on ROA.

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Table 6 – Correlation matrix
(Source: Collected by the author's output of EViews vs. Stata)

Correlation					
Probability	ROA	ROE	FDR	IRR	LIQ
ROA	1.000000				

ROE	0.905845	1.000000			
	0.0000	-----			
FDR	0.033117	0.025535	1.000000		
	0.8414	0.8774	-----		
IRR	-0.019001	0.042105	0.916436	1.000000	
	0.9086	0.7991	0.0000	-----	
LIQ	0.141371	0.196916	0.027868	0.183831	1.000000
	0.3906	0.2295	0.8663	0.2626	-----

Table 7 – Results of tests for cross-sectional independence
(Source: collected by the author's output of EViews vs. Stata)

Test	ROA	ROE	LIQ	IRR	FDR
Breusch-Pagan LM	19.118***	28.415***	4.987	4.594	0.982
Pesaran scaled LM	6.58***	10.375***	0.811	0.651	-0.823
Bias-corrected scaled LM	6.455***	10.25***	0.686	0.526	-0.948
Pesaran CD	4.3261***	5.312***	1.604	1.996**	0.782

*** and ** denote the 1% and 5% levels of significance, respectively

Table 8 - Results of Phillips-Perron test (PP) for Panel Unit Root
(Source: collected by the author's output of EViews vs. Stata)

Variables	Level	1 ST difference	degree of stationarity
ROA	17.5537***		I (0)
ROE	13.2217***		I (0)
FDR	7.978	28.21***	I (1)
ARR	15.7106**		I (0)
LIQ	14.9123**		I (0)

***, ** denote the 1% and 5% levels of significance, respectively

The estimation results also showed that there was a positive effect of FDR on both profitability indicators used in the study, but this effect was insignificant in ROA (model 1) and significant in ROE (model 3). This result agrees with Hosen et al. (2019), which showed the presence of a positive and insignificant effect of FDR on ROA in Islamic banks operating in Indonesia, and a study by Lukman et al. (2022), which showed the presence of a positive but significant effect of FDR on ROA in Islamic banks operating in Indonesia.

However, this result contradicts the result of Mukhibad et al. (2017), which showed the presence of a negative and significant effect of FDR on ROA in Islamic banks operating in Indonesia.

On the contrary, the results of estimating coefficients for measuring the impact of second investments in the fund indicator IRR on the profitability of banks. It was negative and insignificant on ROA (model 2) and positive and significant on ROE (model 4). It is worth noting that there have been no previous studies that measured the impact of this variable on the profitability of Islamic banks. Rather, some studies limited it to using it as an indicator for evaluating banks' performance or comparing the performance of several banks, such as Hasan (2019) and Sakhray (2017).

Table 9 - Estimated models in the long run
(Source: collected by the author's output of EViews vs. Stata)

Dependent variable	ROA		ROE	
	model 1	model 2	model 3	model 4
LIQ	0.007	0.041	-0.190	-0.114
FDR	0.001		0.441***	
IRR		-0.011		0.429***

***, **denote the 1% and 5% levels of significance, respectively

Moving to review the results of estimating the study's models in the short run, we found that the value of the error correction coefficient (ECT-1) in all estimated models was negative and significant at a level of significance of 5%, and this indicates that the deviations in four estimated models in the short run are corrected in less than one year to reach long-run equilibrium relationships. And the liquidity ratio affects ROA negatively and significantly, and this result is consistent with Aldeen et al. (2020), while it has a positive and significant effect on ROE, as shown by the estimation results of models 2 and 3.

So the results of estimating the effect of indicators of investment (FDR and IRR) on profitability varied; it was negative in its first lag, while it was positive and significant in its second lag in models 1 and 3.

Table 10 - Estimated models in the short run
(Source: collected by the author's output of EViews vs. Stata)

Dependent variable	ROA		ROE	
	model 1	model 2	model 3	model 4
ECT ₋₁	-1.144***	-1.160***	-1.091***	-1.066***
D (ROA (-1))	0.478***	0.454		
D (ROE (-1))			0.510***	0.473***
D(LIQ)	0.019	-0.020***	0.531**	0.286
D (LIQ (-1))	0.091	0.073	1.021	0.856
D(FDR)	-0.021		-0.468**	
D (FDR (-1))	0.047***		0.3469**	
D(IRR)		-0.038		-0.593**
D (IRR (-1))		0.039***		0.3457
C	0.024***	0.021***	0.01081	0.044253

***, ** denote the 1% and 5% levels of significance, respectively

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Conclusion and policy implications

Considering the study's attempt to identify the reality of the work of the Syrian Islamic banking sector and to verify the existence of significant differences in the financial performance of the banks operating in it during the period 2010–2022, the study found significant differences in the performance of these banks regarding indicators of investment in them. Compared to the absence of any significant differences in profitability and liquidity indicators, Therefore, H1 was partially accepted.

The study also sought to clarify the impact of investment fund and liquidity indicators on the profitability of Syrian Islamic banks using one of the dynamic panel models, which is the ARDL model. The results showed the presence of a significant effect of investment fund ratios on ROE in the long run. In contrast, there is no effect of the liquidity ratio on ROA or ROE. This indicates that H2 must be partially accepted due to the significant effect of indicators of investment on only one of the banks' profitability indicators (ROE), while H3 must be completely rejected in the long run.

In the short run, the nature of the effect of investment in fund indicators varied from one model to another. The effect of FDR was positive and significant with its second lag on both ROA and ROE, while the effect of IRR was positive and significant on ROA only, contradicting estimation results in the long run. The findings of the research will benefit the bank's management and decision-makers in evaluating the effectiveness of the investment policy followed, and thus will prompt them to expand it, take the decision to modify it, or stop some recruitment due to not obtaining an appropriate benefit from it.

These results also benefit a wide range of parties, such as investors, deposit holders, and supervisory and oversight bodies over the work of Islamic banks. The analysis of indicators adopted in this research is also useful in identifying the true financial performance of Islamic banks and the impact of some factors affecting the profitability of those banks, which allows the possibility of adopting them as evidence that helps them settle their conditions and improve their performance.

Therefore, this study recommends the necessity of Islamic banks working to employ the liquidity available to them in areas that achieve effective investment, especially employing liquidity in credit facilities and investments in their various forms, to achieve levels that will increase profitability indicators and benefit the bank's management and investors.

This will benefit the Syrian economy in general in the context of its need to attract private funds and invest them, especially in the construction and reconstruction processes.

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