Islamic Banking & Finance Review (IBFR)
Volume 10 Issue 1, Spring 2023
ISSN$_{(P)}$: 2221-5239, ISSN$_{(E)}$: 2413-2977
Homepage: https://journals.umt.edu.pk/index.php/IBFR

Article QR

Title:	**Impact of the Islamic Modes of Finance on the Profitability of Islamic Banking Sector in Pakistan**
Author (s):	Mudeeba Gul1, Atta Ullah Khan
Affiliation (s):	Allama Iqbal Open University, Islamabad, Pakistan
DOI:	https://doi.org/10.32350/ibfr.101.01
History:	Received: December 15, 2022, Revised: March 13, 2023, Accepted: May 20, 2023, Published: May 27, 2023
Citation:	Gul, M., & Khan, A. U. (2023). Impact of the Islamic modes of finance on the profitability of Islamic banking sector in Pakistan. *Islamic Banking & Finance Review*, *10*(1), 1–23. https://doi.org/10.32350/ibfr.101.01
Copyright:	© The Authors
Licensing:	This article is open access and is distributed under the terms of Creative Commons Attribution 4.0 International License
Conflict of Interest:	Author(s) declared no conflict of interest

A publication of
Dr. Hasan Murad School of Management (HSM)
University of Management and Technology, Lahore, Pakistan

Impact of the Islamic Modes of Finance on the Profitability of Islamic Banking Sector in Pakistan

Mudeeba Gul[1*], and Atta Ullah Khan[2]

[1] Higher Education Department, Govt. of Khyber Pakhtunkhwa, Pakistan
[2] Department of Economics, Allama Iqbal Open University, Islamabad, Pakistan

Abstract

The persistence of Islamic finance in any economy is arguably essential to address the economic needs of the society. The golden principles of Islam that is, profit and loss sharing, honesty, and doing business keeping in view the welfare of the people can play a vital role in alleviating poverty. The primary objective of the current study is to investigate empirically the impact of the Islamic modes of finance and their contribution in enhancing profitability. For this purpose, time series quarterly data ranging from 2014Q1-2020Q4 of the Islamic modes of finance (including *Sukuk)* were used to find their impact on the profitability of the Islamic banking sector as measured by Return on Asset (ROA). The ARDL and bounds cointegration approach were used to examine the level relationship among the underlying variables. The results provided strong evidence of a long-run equilibrium relationship. The results also showed that *Murabaha, Musharaka, Istisnaa,* and Diminishing Partnership have a prominent positive and significant impact on ROA. However, the impact of *Murabaha* on profitability remains significantly higher as compared to the other modes of finance. The second most important determinant of profitability is *Musharaka,* followed by *Istisnaa*. The estimated value of error correction term showed a significant adjustment towards the long-run equilibrium. These findings may help the managers of Islamic banks in allocating funds to different modes and portfolios for optimal returns. They may also have a big impact on the ability of policymakers to create policies appropriate for interest-free windows and branches. Moreover, they would allow Islamic banks to retain their competitive edge and improve the quality of their services.

***Keywords*:** Conventional Banks (CBs), Islamic Banks (IBs), Islamic modes of finance, profitability, Return on Asset (ROA)

[*] Corresponding Author: gulmudeeba@gmail.com

Introduction

Islamic banking and finance plays an important role in channelizing funds from savers to investors as per *Shariah.* In Islamic finance, risk is shared among the participating groups, which conveys justice and reduces inequality among the different segments of the society. In the era of the second Caliph Hazrat Umar (RA), the Islamic state experienced a well-developed economy with a negligible poverty level. The Holy Quran signifies the fundamentals of Islamic finance on various occassions. The payment of interest *(Riba)* on loans is prohibited in the *Shariah*. Allah says in the Holy Quran, "Allah destroys interest and gives increase for charities. And Allah does not like every sinning disbeliever" (2-276).

Interest-based contracts are explicitly forbidden in Islamic finance, while the Holy Quran allows for trade. Islamic finance is a viable alternative to interest-based finance, since it may efficiently support corporate financing, economic development, and growth. Islamic finance uses trading as its primary method of generating profits which are split as per the agreed terms between the parties providing the funds. To ensure trading activities in different financial circumstances, Islamic banks have created the four basic Islamic financing modes of *Mudaraba, Musharaka, Ijara,* and *Murabaha* (Bakhita, 2017).

The importance of the Islamic modes of finance in financial intermediation has been highlighted in recent studies. The association between Islamic financial intermediation in eight OIC member countries and the Islamic modes of finance was determined by Hafnida et al. (2015). According to the findings, Islamic financing and liquid liabilities have a significant and positive impact on financial intermediation. According to Turki (2017), the Global Financial Crisis 2008-09 had a negative impact on the performance of Commercial Banks (CBs) but had no impact on Islamic Banks (IBs) in Kuwait, United Arab Emirates (UAE), and Saudi Arabia. In the Gulf Cooperation Council (GCC) region, Alqahtani and Mayes (2018) evaluated 76 CBs and IBs during the crisis period and found that smaller IBs exhibited greater stability than other financial institutions. Due to the growing popularity of Islamic banking, the MEASA (Middle East, Africa, and South Asia) region has experienced a sustained growth of more than $2.1 trillion. Moreover, GCC countries have a 25% share in *Shariah*-complaint banking assets, while MEASA countries have a 14% share. This

suggests the growing importance of Islamic banking in both regions (S&P Global Ratings, 2020).

Mustafa (2019) assessed the financial performance of Islamic Commercial Banks (ICBs) in Sudan under Credit Risk (CR) and inflation pressures. Return on Assets (ROA) was utilized as the dependent variable, while capital adequacy ratio, inflation rate, and financing through *Murabaha* were employed as independent variables. CR indicators were found to have a negative impact on the financial performance of ICBs. In another study, the efficiency of IBs was found to be positively correlated with their level of capital adequacy and number of branches, while it was negatively correlated with their poor loan quality.

Most Muslim countries, including Pakistan, have been establishing the Islamic modes of finance parallel to the conventional banking system (Risfandy et al., 2020). Following pure Islamic principles in financial matters would enable us to get rid of many socioeconomic problems, such as debt burden and income disparity among different segments of the population. According to Hassan et al. (2020), the key to meeting the financial requirements of implementing the circular economy is to provide an efficient and sustainable source of financing. Akintan et al. (2021) studied the potential of Islamic finance modes to offer substitute sources of funding for business models in a circular economy. They concluded that alternative financing options, such as *Ijarah, Sukuk, Qard Hassan, Musharakah, Mudarabah,* and *Ju'ala* are crucial to provide solutions to the financing problems that business models must deal with, such as balance sheet extension, increased credit risk in a circular economy, and working capital. There is a dire need to assess the contribution of the Islamic modes of finance to the profitability of IBs in Pakistan using empirical data. Hence, the current study empirically investigated that which mode of Islamic finance among *Mudaraba, Musharaka, Murabaha, Sukuk, Istisnaa, Salam,* and *Ijara* plays a significant role in Islamic banking returns using multiple regression (ARDL model). The results so obtained would be helpful for financial investors, bank managers, and other stakeholders in allocating funds to different avenues as per the *Shariah* rules and principles.

Literature Review

Until the end of 1970s, the main motive for introducing the theories of Islamic finance was to replace interest with risk sharing. It made the fund

owners and financial intermediaries to share risks with fund users, fundamentally altering the nature of financial intermediation. Lending money on interest was argued to be the root of most, though not all, problems related to capitalism, for instance, poverty, inflation, unemployment, recurrent business cycles, and increasing inequality. In depth macroeconomic analysis resulted in strengthening these concepts. *Musharaka* and *Mudarabah* are the earliest types of financing modes in Islamic history. Our Holy Prophet (PBUH) practiced the *Mudarabah* contract with Hazrat Khadija (May Allah Be Pleased with Her).

Since 2007, CBs have faced many financial crises (Erfani & Vasigh, 2018), whereas, Islamic finance is still a growing industry, which as shown resilience to shocks. After the Global Financial Crisis 2008-09, the Islamic banking system got traction as an alternative financial system. Including Pakistan most of the Muslim countries are establishing Islamic mode of finance parallel to the conventional banking system (Risfandy et al., 2020). The IFSI Stability Report 2020 highlighted that despite issues such as the global volatility of crude oil price and the COVID-19 pandemic, an increase of USD 2.44 trillion was observed in IFSI's total worth, thus recording an 11.4% year-on-year growth momentum. The report suggested that Islamic financial assets may increase many times their current value during the next few years (Islamic Financial Services Board [IFSB], Stability Report, 2020).

Research has been conducted globally regarding the effectiveness of Islamic banking. Boyante (2014) studied Kenyan banks over a six-year period (2008-2013) to investigate their profitability. The nature of the link between the variables was determined through regression analysis. It was discovered that there exists a substantial positive association between various financing modes and the performance of IBs. The study concluded that an increase in the performance of IBs is associated with a rise in any of the concerned variables. Several researchers have focused on establishing the Key Performance Indicators (KPIs) of IBs such as profitability, risk, and efficiency. The banking sector's profitability is influenced by both internal and external variables. Olalekan et al. (2018) examined how financial risks affected the profitability of Nigerian banks. They concluded that capital risk has a beneficial impact on bank profitability, although credit risk has a largely negative impact.

Empirical investigations were carried out in many nations, including

Malaysia, Egypt, and Pakistan but due to the differences in the studied time periods, social perspectives, and analytical tools used, not all researches provide the same results (see, e.g., Bukhari & Harrathi, 2015; Safiullah & Shamsuddin, 2020). For the GCC region, Malaysia, and Pakistan, Arafat et al. (2021) compared how the COVID-19 pandemic affected the performance and stability of conventional and Islamic banks? The findings suggested that either type of banking was impacted during the pandemic and found no meaningful evidence of the influence of the pandemic on the stability of these banks. Sitompul et al. (2021) compared the effectiveness of conventional and Islamic banks for the period 2014-2019. Their study revealed no significant differences in the performance of these two types of banks. Ali and Hailu (2022) demonstrated that CBs are technically more efficient, both individually and collectively. However, the cost efficiency scores revealed that the banks are not sufficiently cost-effective for a particular scale and mix of output. Using Multivariate Adaptive Regression, Saâdaoui and Khalfi (2022) evaluated the effectiveness of IBs and discovered that they are generally more effective in industrialized nations than in developing nations.

Islamic banking in Pakistan has experienced exponential growth. The deposits in IBs experienced a quarterly growth of 1.5%, while net assets increased by 2.3%. In the banking sector in terms of assets, the share of IBs was 15.2% and in terms of deposits, their share reached 16.9% by the end of March 2020 (State Bank of Pakistan, 2020). In Pakistan, Islamic banking has different financing portfolios. One of the major portfolios is the corporate sector with a 74.74% share and consumer finance has a 10.48% share (Zafar & Suleiman, 2020). In 2012, Usman and Khan showed that IBs, as compared to CBs, have a high growth rate, profitability, and a high liquidity power. Rashid et al. (2015) compared the performance of conventional and Islamic banks operating in Pakistan by establishing the financial performance index. They discovered that IBs ranked 12th on the list in terms of financial performance, while CBs ranked first on that list and their progress ratio performance was better in 2012 than in 2006. These studies revealed that IBs perform comparably better than CBs. Rashid and Khalid (2017) investigated the impact of real interest rate uncertainty and inflation on Pakistani banks' solvency and performance. Unexpected changes in the real interest rate tend to have a favorable impact on the financial health of IBs, while high inflation has a detrimental impact on their solvency. Rehman and Rashid (2022) compared and studied the effects of

macroeconomic risks and bank-specific risks on the expansion, profitability, and stability of Islamic and conventional banks. They found that the expansion, prosperity, and stability of Pakistani banks are negatively impacted by both bank-specific risks and macroeconomic risks.

These studies showed that IBs are more liquid, profitable, less risky, and cost-effective than their conventional counterparts. They also have a higher loan portfolio quality and capital sufficiency, although they fall short in terms of operational efficiency (Ayeni et al., 2017). To conclude, numerous studies have demonstrated that despite the Global Financial Crisis 2008-09, the effectiveness of IBs worldwide has increased, significantly. Mostly, the studies mentioned above were carried out to compare the performance of Islamic and conventional banks and to analyze Islamic financial modes as alternative sources of financing, theoretically. In this study, it is empirically investigated that which mode of Islamic finance among *Mudaraba, Musharaka, Murabaha, Sukuk, Istisnaa, Salam*, and *Ijara* plays a significant role in enhancing the banking sector's profitability. Further, the variables affecting the banking sector's profitability positively are investigated.

Material and Method

The primary types of Islamic financing are *Musharaka* (partnership), *Mudaraba* (trust finance), *Murabaha* (cost-plus financing), *Salam* (advance purchase), *Istisnaa* (commissioned manufacture), *Ijara* (lease), and *Sukuk,* as identified by Hassan and Lewis (2007) in Islamic banking (participation securities). *Musharaka* constitutes a contract between two parties, entitled as business partners. Both parties contribute to capital investment and labor/effort. Both parties share the profit and loss as well (Islam & Ahmad, 2020). *Murabaha* is the mode of Islamic finance which is often used to purchase an asset. In this mode of financing, the client (women entrepreneur) apply to the financial institution to purchase a required asset on her behalf. After the purchase, the bank resells it to the customer for the same price as before, by adding and mentioning the profit (Shehu et al., 2020). Diminishing Partnership is an agreement between a bank and a customer in which the bank and the client jointly make a purchase, for example, the bank's stake in a home is divided into pieces and sold on a regular basis to the customer till the buyer becomes the sole owner of the home (Abozaid, 2021). According to the Indonesian Central Bank, a contract between a seller (Muslam Ilaih) and buyer (Muslam), regarding buying and selling of ordered goods, is called *Salam* (Waluyo & Rozza,

2020). Financial certificates known as '*Shariah* compliant' bonds are referred to as *Sukuk* in Arabic. It comprises a *Shariah*-compliant style of finance that ensures a proportionately favorable possession of a specific venture's definite physical assets. *Istisnaa* is another type of sale where a commodity is purchased before its production, that is, the buyer orders the manufacturer to produce a specific item and pays in advance (Usmani, 2002).

In Pakistan, IBs have completed two decades of operations. Currently, Islamic banking services are available through 22 banks including sixteen (16) CBs that offer Islamic banking services and six (6) full-fledged IBs. The data is sourced from Islamic Financial Services Board (IFSB). Aggregate quarterly time series data published by IFSB for all these banks was used for the period 2014 Q1 to 2020 Q4 in this study.

The quantity of financing made per financing method, as well as the earnings generated after taxes because of each funding method, comprises the critical data for the current study. Profitability is defined as the difference between income and expenditure. It also comprises the income yielding from a transaction, investment, or an advantage resulting from a financial activity. The profitability of a bank is impacted by both internal and external factors (Mercia et al., 2002). Theoretically, three types of indicators affect a bank's profitability, namely industry-specific, bank-specific, and macroeconomic indicators. Earning is the most important aspect of performance since it is linked to the most central goal of commercial enterprises, namely profit or value maximization. ROA is a non-traditional metric of profitability that emphasizes a company's capacity to transform its assets into earnings. In this study, ROA is used as proxy for bank earnings (profitability). To calculate ROA, the amount of profit before taxes was divided by total assets, that is, total comprehensive income divided by total assets.

In the current study, descriptive research design was adopted to explore the relationship between the banks' profitability and Islamic financing portfolios. The independent variables were *Musharaka, Murabaha, Sukuk, Istisnaa, Salam,* and *Ijara,* while ROA was the dependent variable.

The unit root test, heteroscedasticity, normality, and autocorrelation-LM tests were carried out in this study. Model specification was also tested through the Ramsey reset test. These diagnostic tests revealed the

appropriateness of the model to be used for ARDL regression analysis. They also determined the influence of various Islamic financial modes on the profitability of Pakistan's Islamic banking industry.

The regression equation is as follows,

$$ROA_t = \beta_\circ + \beta_1 DP_t + \beta_2 lnMUS_t + \beta_3 lnMUR_t + \beta_4 lnSAL_t + \beta_5 lnIJA_t + \beta_6 lnSUK_t + \beta_7 lnIST_t + \in_t$$

ROA = Return on asset.

MUS = Amount of *Musharaka* (partnership) mode

DP = Amount of Diminishing Partnership financing mode

MUR = *Murabaha* (cost-plus) financing amount

SAL = *Salam* amount (advance purchase) mode

IJA = Amount of *Ijara* (rental/leasing) financing mode

SUK = Amount of *Sukuk* (participation securities) financing mode

IST = Amount of *Istisnaa* (commissioned manufacture) financing mode

According to Bashir and Kabir (2005), improvements in loan band capital ratios have a positive influence on the profitability indices for IBs. Financial ratios have been used to evaluate the performance of IBs. According to financial news reports, investors take keen interest to diversify their investments in order to maximize their profits. This means that various Islamic financial modes and their related returns have an impact on investment decisions. As reliable quarterly data is scarcely available, so if the number of control variables are increased as part of explanatory variables, it yields specification error. To avoid this issue, in the current study the explained variable is Return on Assets (ROA) and explanatory variables are the various Islamic modes of finance. To reduce the effects of heteroscedasticity in the time series data, some variables were transformed into natural logarithms, such as lnSAL, lnMUR, lnMUS, lnIST, and lnSUK.

Results and Discussion

Descriptive Statistics

Table 1 shows the basic properties of the data characterized by descriptive statistics.

Table 1

Descriptive Statistics of Series

	ROA	SAL	SUK	MUS	MUR	IST	IJA	DP
Mean	1.808281	11535.06	226223.2	78301.93	45932.36	27140.53	23211.87	171900.6
Median	1.684157	10202.97	218820.3	68381.77	45890.80	17150.44	25485.04	135073.2
Maximum	3.222303	31933.57	524104.1	178730.5	62247.68	74358.41	32032.50	344088.3
Minimum	0.912262	3378.687	95161.44	14016.40	29841.37	3032.888	10165.98	31287.30
Std. Dev.	0.621963	6056.105	98890.92	54840.77	8539.641	24666.34	7732.604	105894.8
Skewness	0.435948	1.959960	1.127154	0.209984	0.218159	0.700143	-0.327340	0.159328
Kurtosis	2.301946	7.013151	4.568586	1.554040	2.401647	1.956274	1.513766	1.425483
Jarque-Bera	1.455395	36.71635	8.799429	2.645036	0.639801	3.558528	3.077079	3.010754
Probability	0.483020	0.000000	0.012281	0.266464	0.726221	0.168762	0.214694	0.221934

Table 2

Unit Root Results

Unit Root Results									
At Level									
		ROA	LNMUR	LNMUS	LNIST	LNSAL	LNSUK	DP	IJA
With Constant	*t*-Statistic	-1.1424	-2.0831	-0.9088	-1.0801	-2.2984	-0.7759	0.1741	-1.4257
	Prob.	0.6837	0.2525	0.7697	0.7086	0.1796	0.8099	0.9656	0.5548
At First Difference									
		d(ROA)	d(LNMUR)	d(LNMUS)	d(LNIST)	d(LNSAL)	d(LNSUK)	d(DP)	d(IJA)
With Constant	*t*-Statistic	-4.4957	-5.2798	-4.8707	-6.1767	-6.3661	-3.7858	-4.0294	-4.5460
	Prob.	0.0015	0.0002	0.0006	0.0000	0.0000	0.0084	0.0047	0.0014
		***	***	***	***	***	***	***	***
UNIT ROOT TEST TABLE (ADF)									
At Level									
		ROA	LNMUR	LNMUS	LNIST	LNSAL	LNSUK	DP	IJA
With Constant	t-Statistic	-1.1424	-2.0669	-0.8995	-1.1126	-3.2292	-0.9665	0.1741	-1.4960
	Prob.	0.6837	0.2587	0.7727	0.6958	0.0296	0.7497	0.9656	0.5203
		no	no	no	**	no	no	no	
At First Difference									
		d(ROA)	d(LNMUR)	d(LNMUS)	d(LNIST)	d(LNSAL)	d(LNSUK)	d(DP)	d(IJA)
With Constant	*t*-Statistic	-4.5169	-5.2024	-1.7555	-6.1619	-5.8154	-3.7813	-4.0218	-4.4727
	Prob.	0.0015	0.0003	0.3922	0.0000	0.0001	0.0085	0.0048	0.0016
		***	***		***	***	***	***	***

Note. (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%. and (no) Not Significant

The mean values of Diminishing Partnership and *Sukuk* holdings are Rs.171900.6 million and Rs. 226223.2 million respectively, with standard deviations of 105894.8 and 98890.92, respectively. With Rs. 78301.93 million and a standard deviation of 54840.77, *Musharaka* comes in third. *Salam* has the lowest mean value of Rs. 11535.06 million and its standard deviation is 6056.105. The table shows that all the variables under consideration have a positive mean and standard deviation which indicate the existence of a relationship among them and IBs' profitability.

The Kurtosis values of SUK (4.5685) and SAL (7.0131) mirror the fact that the distribution has a long right tail. It is clearly Leptokurtic and all other variables are Platykurtic, as their Kurtosis values are lower than the value of 3.

The normal distribution is the null hypothesis for the Jarque-Bera test. The probability value for ROA is 0.4830 which is over the significance level of 0.05. So, in terms of ROA, it is a normally distributed series. The same interpretation can be given for MUR, MUS, IST, IJA, and SUK having normal distributions.

Test of Stationarity

Time series was checked for stationarity using unit root tests. Table 2 shows the results of the unit root test for the purpose of assessing the stochastic features of the data based on the series of each variable using the augmented Dickey-Fuller and Phillips-Perron (PP) tests. The findings showed that none is stationary at level with PP and only *Istisnaa* is stationary at level with the ADF unit root test. At the first difference, all time-series variables were once again examined for stationarity using both ADF and PP tests. The first difference's outcome showed that every variable is stationary with PP. The findings demonstrated varied integration in mix order, that is, one or zero. It also indicates that, apart from lnSAL, all the variables are integrated as of I (1). Since there is no variable which is I (2) and has a mixture of order of integration, the use of ARDL model is justified. Performing a cointegration test is necessary to establish a long-run relationship.

Selection of Optimal Lag

The lags lengths of the ARDL model were selected using Akaike Information Criterion (AIC). In AIC and SIC criteria, the rule of thumb is that the lag at which AIC or SIC values are the lowest should be chosen.

The optimal lag length is 1.

Table 2

VAR Lag Order Selection

VAR Lag Order Selection Criteria Endogenous variables: ROA, LNSUK, LNSAL, LNMUS, IJA, DP, LNMUR, LNIST						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-563.1100	NA	3.26e+08	42.30444	42.68840	42.41861
1	-374.4707	251.5190*	39368.92*	33.07190*	36.52747*	34.09943*

It was explored that whether a long-run equilibrium exists between ROA and Islamic financial modes using the bound testing approach for cointegration and the Error Correction Model (ECM) built within an ARDL model.

Results of ARDL Model

Table 4 demonstrates that the lags of some Islamic financial variables have a substantial impact on ROA. The first lag of lnMUS, lnMUR, and IJA has a highly significant effect. The first lag of ROA at 10% level has a significant effect on ROA itself.

Table 4

ARDL Results

Dependent Variable: ROA Method: ARDL Sample: 2014Q2 2020Q4				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
ROA(-1)	0.147750	0.078606	1.879621	0.0797
LNSUK	0.321124	0.134862	2.381125	0.0309
LNSAL	-0.212881	0.062484	-3.406955	0.0039
LNMUS	0.517439	0.256593	2.016576	0.0620
LNMUS(-1)	0.828471	0.188629	4.392059	0.0005
IJA	-2.38E-05	2.78E-05	-0.855575	0.4057
IJA(-1)	-0.000286	3.70E-05	-7.719396	0.0000
DP	2.36E-06	1.22E-06	1.941025	0.0713
LNMUR	0.267923	0.262422	1.020962	0.3235
LNMUR(-1)	2.698285	0.292806	9.215259	0.0000
LNIST	0.769602	0.099664	7.721962	0.0000
R^2	0.986526	*F*-statistic		99.83813
Adjusted R^2	0.976644	Durbin-Watson stat		2.246762

In the above results the value of $R^2 = 0.98$, which is less than the Durbin-Watson stat = 2.2 value. So, the proposed model has no spurious relationship. The bound test is used to assess if the variables have a long-term relationship. The data series findings revealed (Table 5) that the *F*-statistic is bigger than the upper bound, implying that there is a long-run association at all levels of significance (1%, 5%, and 10%, respectively). The series is linked and can be mixed in a linear sequence.

For ROA itself, the lagged period has a positive significant influence on itself on the current period at 10% level of significance. Based on the Wald test, ROA lag 1 can influence itself. *Sukuk* is positively related to ROA. Similarly, based on the Wald test, the lnSUK at level can influence ROA. So, the rising lnSUK can influence ROA. In the case of lnMUS, at level this variable has an impact on ROA. Based on the Wald test jointly at level and lag 1, this variable has a significant impact on ROA. The variable lnMUR at level and at lag (1) jointly has a significant impact on ROA, as shown by the Wald test outcome. The first variable at level has a significant influence on ROA. The positive signs are in conformity with the finance theory. As investment in these modes increases, the earnings of IBs also increases. SAL and IJA have a significant negative impact on ROA. The negative impact may be due to the lack of proper regulatory structure in Pakistan.

Table 5

Summaries of the Findings: Bound Test Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: *n*=1000	
F-statistic	29.07650	10%	2.03	3.13
K	7	5%	2.32	3.5
		2.5%	2.6	3.84
		1%	2.96	4.26
Actual Sample Size	27		Finite Sample: *n*=35	
		10%	2.3	3.606
		5%	2.753	4.209
		1%	3.841	5.686

The bound *F*-statistic value in the current model is 29.07650, which is

more than the upper bound I (1) values of (3.5) at 5%, (3.84) at 2.5%, and (4.26) at 1% critical values, indicating that the series is cointegrated. As a result, both long-run and ECM models can be estimated in the following phases.

Table 6 shows the long-term findings and indicates that lnSUK, lnIST, and DP are positively correlated and have a significant impact on ROA. The variable lnMUR also has a positive and significant impact at 10% critical value. In the long-run, IJA has a negative but significant impact on ROA.

Table 6

Long-Run Results

Levels Equation Case 3: Unrestricted Constant and No Trend				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
LNSUK	0.376795	0.145120	2.596431	0.0202
LNMUS	1.579243	0.384466	4.107626	0.0009
LNMUR	3.480443	0.373435	9.320069	0.0000
LNSAL	-0.249787	0.066859	-3.736041	0.0020
LNIST	0.903023	0.095697	9.436228	0.0000
IJA	-0.000363	4.00E-05	-9.074223	0.0000
DP	2.77E-06	1.31E-06	2.117217	0.0514
EC = ROA - (0.3768*LNSUK + 1.5792*LNMUS + 3.4804*LNMUR -0.2498 *LNSAL + 0.9030*LNIST -0.0004*IJA + 0.0000*DP)				

The lnMUR or *Murabaha* coefficient of 3.48 is the most important component in evaluating the influence on ROA in Pakistan. It shows that in the long-run, a 1% rise in the MUR causes an average of 3.48% increase in ROA (proxy for profit). The lnMUS, that is, *Musharaka* is the second largest positive determinant of IBs' profits with the coefficient of 1.579. This result is in line with Boyante (2014).

Istisnaa is the next major component in determining the positive influence on ROA. It has a positive impact on ROA with a coefficient of 0.903 and is statistically highly significant. In the same way, the impact of *Sukuk* and Diminishing Partners is positive and statistically significant. Furthermore, *Salam* and *Ijara* are negatively related to ROA and are not in conformity with the finance theory. This is in line with the results of Bakhita (2017). This negative relationship may be attributed to the existence of an underdeveloped Islamic financial system or the non-aggressive attitude of

investors towards risk in the Islamic banking in Pakistan.

Due to cointegration, ECM was estimated. According to ECM, *Musharaka* and *Murabaha* were found to have the biggest beneficial influence on ROA in the short-run and remain statistically significant (see Table 7). In the short-run, their positive signs conform with the finance theory.

Table 7
ECM (Short-run) Results

ARDL Error Correction Regression Sample: 2014Q1 2020Q4				
Variable	Coefficient	Std. Error	*t*-Statistic	Prob.
C	-47.74388	2.590216	-18.43239	0.0000
D(LNMUS)	0.517439	0.122230	4.233323	0.0007
D(LNMUR)	0.267923	0.136837	1.957970	0.0691
D(IJA)	-2.38E-05	1.64E-05	-1.448750	0.1680
CointEq(-1)*	-0.852250	0.046141	-18.47063	0.0000
R^2	0.945065	Durbin-Watson stat		2.2
Adjusted R^2	0.935077	Prob(*F*-statistic)		0.000000
F-statistic	94.61906			

CointEq (-1)* is negative in the current situation, with a coefficient estimate of -0.85. It is statistically significant and has a correct sign. This indicates that the system adjusts to long-run equilibrium at an 85% rate or that the system corrects its preceding period's disequilibrium at an 85% rate. Hence, it may be assumed that during each quarter, 85% of the adjustment from short to long-run occurs towards long-run equilibrium.

Diagnostics Tests / Post Estimation Tests

The specification of the proposed econometric model was tested. Diagnostics tests are required to verify the reliability of the estimated coefficients.

These tests include:

i. Stability tests

ii. Serial Correlation test

iii. Heteroscedasticity test

iv. Linearity / Model Specification test

Stability Tests

CUSUMSQ tests (Cumulative Sum of Square) were employed to determine the appropriateness and stability of the model. These tests show whether all the coefficients in the model are stable.

Figure 1

CUSUM Stability Test of ARDL (1, 0, 1, 1, 0, 0, 1, 0)

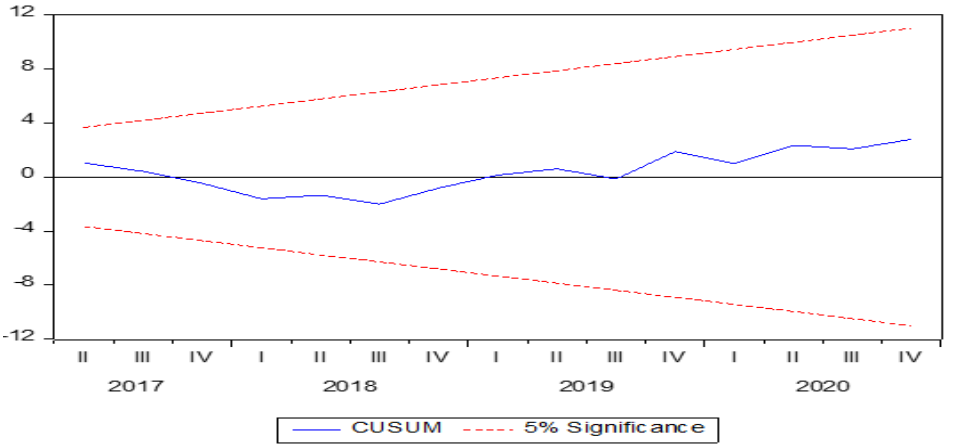

Figure 2

CUSUMQ Stability Test of ARDL (1, 0, 1, 1, 0, 0, 1, 0)

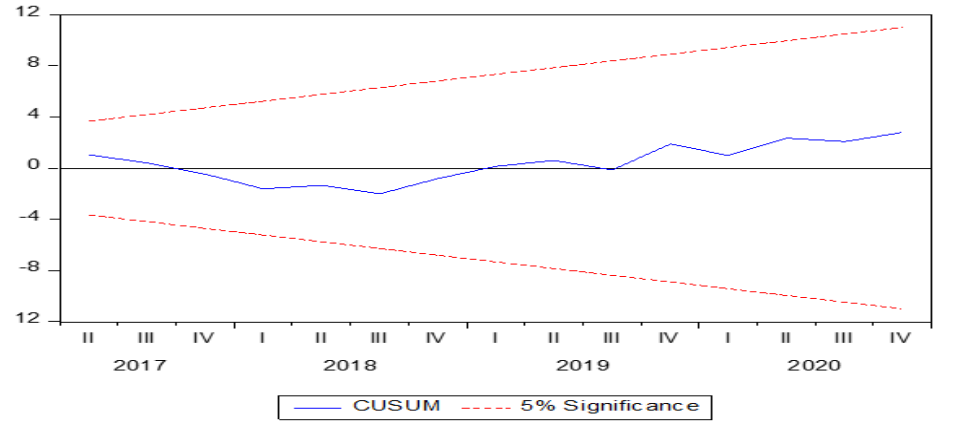

Figure 2 confirms that there is no root lying outside the significance level. It indicates that the estimated model satisfies the stability condition.

Checking Serial Correlation

The observed *R-squared is 1.7 and the probability value of Chi-Square is 18.8% which is greater than 0.05. So, HO is accepted. The proposed model is free from serial correlation.

Table 8
Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.960455	Prob. *F* (1,14)	0.3437
Obs*R^2	1.733389	Prob. Chi-Square (1)	0.1880

Heteroscedasticity Test

In this study, the Breusch-Pagan –Godfrey test was applied.

Table 9
Breusch-Pagan-Godfrey – Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.168040	Prob. *F*(11,15)	0.3816
Obs*R^2	12.45700	Prob. Chi-Square(11)	0.3303

Linearity Tests

This is a general test for specification errors caused by missing variables and erroneous functional forms. As the F-statistic in the model is not significant, the probability values are over 0.05. It signifies that the estimated model is free from specification error, so the proposed model is correctly specified.

Table 10
Ramsey RESET Test

Ramsey RESET Test Specification: ROA(-1) LNSUK LNMUS LNMUS(-1) LNMUR LNMUR(-1) LNSAL LNIST IJA IJA(-1) DP C Omitted Variables: Squares of fitted values			
	Value	*df*	Probability
t-statistic	0.312246	14	0.7595
F-statistic	0.097498	(1, 14)	0.7595

Conclusion

The study discussed the core concepts of Islamic finance and its

empirical contribution in generating profits. The ARDL model was deployed for an Islamic banking portfolio owned by banks in Pakistan and each variable's contribution to the profit (ROA) in the model is represented in terms of beta values. According to the data, the largest contributors are *Murabaha* and *Musharaka*. *Istisnaa* comes in the third position. These results are in line with Boyante (2014). The findings revealed that various Islamic financing modes have a significant and dynamic impact on bank profitability. The findings also suggest that ROA in Pakistani IBs is sensitive to Islamic portfolio characteristics, implying that Islamic modes of finance are the greatest dynamic predictors of Islamic financial economy. To take advantage of diversification in portfolio, IBs must pay key attention to various Islamic financial modes, such as *Istisnaa* and Diminishing Partnership with a statistically significant contribution.

It is vital to stress the importance of such variables' predictions because they affect financial activity which improves the financial market. As a result, the Islamic economy's stability is enhanced. By estimating and evaluating ARDL results, the current study's empirical objective of determining the contribution of each Islamic financial mode in generating the profits (ROA) of IBs was achieved. The alternative hypothesis proved valid. So, the Islamic modes of finance were determined to have a significant impact on the profitability of the Islamic banking sector of Pakistan.

Limitation

This study was limited to the Islamic banking system and Islamic modes of finance. A similar study in the future, when there are additional IBs to investigate and for a longer period, may gain a deeper understanding of their performance as well as the contribution of each financing mode.

References

Abdeen, A., & Shook, D. N. (1984). *The Saudi financial system, in the context of Western and Islamic finance.* Wiley.

Abozaid, A. (2021). Penalty and compensation in financial commitments a critical shariah review. *Journal of College of Sharia & Islamic Studies*, *38*(2), 253–266. https://doi.org/10.29117/jcsis.2021.0276

Akintan, I., Dabiri, M., & Salaudeen, J. (2021). A literature review on islamic finance modes as an alternative approach to finance the business

model of a circular economy. *Inernational Research Journal of Shariah, Muamalat and Islam*, *3*(8), 31–48. https://doi.org/10.35631/IRJSMI.38003

Ali, A. S., & Hailu, S. M. (2022). Efficiency of islamic banks: evidence from islamic windows of conventional banks in Ethiopia. *International Journal of Islamic Banking and Finance Research*, *9*(1), 21–31. https://doi.org/10.46281/ijibfr.v9i1.1768

Alqahtani, F., & Mayes, D. G. (2018). Financial stability of Islamic banking and the global financial crisis: Evidence from the Gulf Cooperation Council. *Economic Systems*, *42*(2), 346–360. https://doi.org/10.1016/j.ecosys.2017.09.001

Arafat, Q. Y., Rashid, A., & Jan, Q. W. (2021). Impact of COVID-19 on the performance and stability of conventional and Islamic banks in the GCC region, Malaysia, and Pakistan. *Islamic Banking and Finance Review*, *8*(1), 24–37. https://doi.org/10.32350/ibfr.81.02

Ayeni, A. P., Ibrahim, J., & Adeyemi, A. O. (2017). Tax revenue and Nigerian economic growth. *European Journal of Accounting, Auditing and Finance Research*, *5*(11), 75–85.

Bakhita, H. G. B. (2017). Impact of Islamic modes of finance on economic growth through financial stability. *Journal of Business & Financial Affairs*, *6*(1), Article e1000249.

Bashir, A.-H. M., & Kabir, M. H. (2005). Determinants of Islamic banking profitability. In M Iqbal & R. Wilson (Eds.), *Islamic perspectives on wealth creation*. Oxford Academics. https://doi.org/10.3366/edinburgh/9780748621002.003.0008

Boyante, R. A. (2014). *The effect of the Islamic financing modes on the profitability of commercial banks in Kenya* [Master thesis, University of Nairobi]. University of Nairobi Research Archive. http://erepository.uonbi.ac.ke/handle/11295/76898

Bukhari, M. S., & Harrathi, N. (2015). Bank efficiency analysis: Islamic banks versus conventional banks in the gulf cooperation council countries 2006 - 2012. *International Journal of Financial Research*, *6*(4), 143–150. https://doi.org/10.5430/ijfr.v6n4p143

Chapra, M. U. (2008). *The Islamic vision of development in the light of Maqāsid al-sharī ʻah* (Islamic Research and Training Institute Working Paper no. 235). https://doi.org/10.13140/RG.2.1.4188.5047

Erfani, G. R., & Vasigh, B. (2018). The impact of the global financial crisis on profitability of the banking industry: A comparative analysis. *Economies*, *6*(4), e66. https://doi.org/10.3390/economies6040066

Hafnida, H., Selamah, M., & Hussain, A. (2015). An empirical study of the relationship between Islamic modes of finance and financial intermediation. *International Journal of Business and Management*, *10*(7), 93–98. http://doi.org/10.5539/ijbm.v10n7p93

Hassan, M. K., Saraç, M., & Alam, A. (2020). Circular economy, sustainable development and the role of Islamic finance. In M. SARAÇ & M. K. HASSAN (Eds.), *Islamic perspective for sustainable financial system* (pp. 1–26). Instanbul University Press.

Ichsan, R. N. (2021). Determinant of Sharia Bank's financial performance during the Covid-19 pandemic. *Budapest International Research and Critics Institute Journal*, *4*(1), 298–309.

IFSB Stability Report. (2020). *The IFSB Islamic financial services industry (IFSI) stability report 2020.* https://www.ifsb.org/download.php?id=5724&lang=English&pg=/sec03.php

Isiaka, L., Mustapha, L., & Irom, M. (2018). Financial risk management and the profitability: An empirical evidence from commercial banks in Nigeria. *Sahel Analyst: Journal of Management Sciences*, *16*(2), 117–137.

Islam, R., & Ahmad, R. (2020). Mudarabah and musharakah as micro-equityfinance: perception of Selangor's disadvantaged women entrepreneurs. *ISRA International Journal of Islamic Finance*, *12*(2), 128–197. https://doi.org/10.1057/s41287-019-00225-3

Mercia, M. C., Evren, O., & Hassan, T. (2002). Bank performance around the introduction of subsidiary banks in the US. *Journal of Banking and Finance*, *17*, 389–400.

Mustafa, O. A. (2019). Assessment of the financial performance of Islamic commercial banks in Sudan under credit risk and inflation pressures

(1995-2017). *Journal of Islamic Banking and Finance*, *7*(1), 14–26. https://doi.org/10.15640/jibf.v7n1a2

Olalekan, L. I., Mustapha, L. O., Irom, I. M., & Emily, B. N. (2018). Corporate board size, risk management and financial performance of Listed Deposit Money Banks in Nigeria. *European Journal of Accounting, Auditing and Finance*, *6*(1), 1–20.

Rashid, A., & Khalid, S. (2017). Impacts of inflation and interest rate uncertainty on performance and solvency of conventional and Islamic Banks in Pakistan. *Journal of Islamic Business and Management*, *7*(2), 156–177. https://doi.org/10.26501/jibm/2017.0702-002

Rashid, A., Khaleequzzaman, M., & Jabeen, S. (2015). Analyzing performance of banks in Pakistan: Conventional versus Islamic banks. *Journal of Islamic Business and Management*, *5*(2), 17–42.

Rehman, U. J., & Rashid, A. (2022). Impacts of bank-specific and macroeconomic risks on growth and stability of islamic and conventional banks: An empirical analysis from Pakistan. *Journal of Asian Finance, Economics and Business*, *9*(2), 1–14.

Risfandy, T., Harahap, B., Hakim, A. R., Sutaryo, S., Nugroho, L. I., & Trinugroho, I. (2020). Equity Financing at Islamic Banks: Do Competition and Bank Fundamentals Matter? *Emerging Markets Finance and Trade*, *56*(2), 314–328. https://doi.org/10.1080/1540496X.2018.1553160

S&P Global Ratings. (2020). Islamic Finance Outlook 2020. https://www.spglobal.com/_assets/documents/ratings/research/islamic_finance_2020_screen.pdf

Saâdaoui, F., & Khalfi, M. (2022). Revisiting Islamic banking efficiency using multivariate adaptive regression splines. *Annals of Operations Research*, 1–29. https://doi.org/10.1007/s10479-022-04545-2

Safiullah, M., & Shamsuddin, A. (2020). Technical efficiency of Islamic and conventional banks with undesirable output: Evidence from a stochastic meta-frontier directional distance function. *Global Finance Journal*, *51*, Article e100547 https://doi.org/10.1016/j.gfj.2020.100547.

Shehu, F. M., Hayati, N., & Ahmad, B. (2020). Interest Based Micro-Credit Is A Problem For Women Entrepreneurs : Considering Murabaha

Financing As An Alternative In The Light Of Maqasid Al- Shari'ah. *International Journal of Zakat and Islamic Philanthropy*, *2*(2), 188–198.

Sitompul, S., Ichsan, R. N., & Nasution, L. (2021). The influence of exchange rate, inflation, for the results of the development assets of Islamic banks. *Journal of Economics, Finance and Management Studies*, *4*(3), 138–148. https://doi.org/10.47191/jefms/v4-i3-05

State Bank of Pakistan. (2020). Islamic banking bulletin. https://www.sbp.org.pk/ibd/bulletin/2020/Sep.pdf

Tahir, U., & Rashid, A. (2021). Evaluation of Contemporary Takaful Practices from the Perspective of Maqasid al-Shariah. *Journal of Islamic Business and Management*, *11*(2), 296–311. https://doi.org/10/26501/jibm/2021.1102-005

Turki, A. (2017). Performance differences between Islamic and conventional banking forms. *Banks and Bank Systems*, *12*, 237–46. https://doi.org/10.21511/bbs.12(3-1).2017.08

Usman, A., & Khan, M. K. (2012). Evaluating the financial performance of islamic and conventional banks of Pakistan: A comparative analysis. *International Journal of Business and Social Science*, *3*(7), 253–257.

Usmani, M. T. (2002). *An introduction to Islamic finance.* Kluwer Law International.

Waluyo, B., & Rozza, S. (2020). A model for minimizing problems in salam financing at Islamic banks in Indonesia. *International Review of Management and Marketing*, *10*(2), 1–7. https://doi.org/10.32479/irmm.9149

Zafar, M. B., & Sulaiman, A. A. (2020). Islamic banking in Pakistan: Emergence, growth, and prospects. In A. Rafay (Eds.), *Growth and emerging prospects of international Islamic banking* (pp. 61–77). IGI Global. https://doi.org/10.4018/978-1-7998-1611-9.ch004