The financial impact of deposit interest rates in Iranian Islamic banks: A dependency on the conventional banking system

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Abstract

The foundation of Islamic banking lies in profit-sharing, the specification of resource utilization paths, and the supervision of banking operations. Unlike conventional banking, in Islamic banking, depositors' funds are invested according to Sharia-compliant legal frameworks and specific contractual agreements. This study evaluates and compares the financial performance and dependency of deposit interest rates between Islamic banks in Iran and the conventional banking system. Considering the ex-post nature of the research topic, past data (spanning from March 21, 2009, to July 21, 2024) were analyzed using the nonlinear autoregressive distributed lag (NARDL) approach. All analyses were conducted using EViews software version 13. The results indicate that the overnight policy rate, linked to the central bank's interest rate, serves as a statistically significant determinant, both positively and negatively, for the Islamic money market rate in the short and long term. Furthermore, this study examines maturity-aligned rates and evaluates the significant positive and negative impacts of fixed deposit rates in conventional banks on investment rates in Islamic banks over both short and long horizons. The Islamic money market rate, used as a proxy for monetary policy rates, has a statistically significant positive and negative influence on Islamic bank deposit rates in the short and long term.

Keywords: financial performance, deposit interest rate dependency, Islamic banks, conventional banks
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1 Introduction

In theory, the cornerstone of Islamic finance is avoiding interest (riba) and sharing risk. However, Islamic banks appear to lack both in practice, particularly the latter [17]. Islamic banking encompasses activities beyond standard banking operations that regulate the relationship between depositors and the bank in a manner devoid of riba. The establishment of Islamic banking does not merely involve the elimination of riba; rather, it necessitates the infusion of Islamic cultural principles into various aspects of banking operations. Islamic banking represents a distinct and advanced form of conventional banking, striving to align all relationships with Sharia, Islamic economics, and Islamic jurisprudence. Islamic banking, often called interest-free banking, significantly impacts economic growth. It is one of the fastest-growing sectors in the banking industry and is a vital channel for economic development. In Islamic banking, depositors' funds are invested under Sharia-compliant legal frameworks and through specific contractual agreements [20]. Profitability is one of the most critical and widely favored performance indicators, primarily due

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to its importance to bank owners. A profitable banking system and efficient management are of utmost significance. Higher profitability indicates better management and superior financial performance [2].

The payment of guaranteed returns instead of provisional profits to depositors and competition over offering unconventional returns are among the indicators of incomplete adherence to the banking system's principles of the Interest-Free Banking Law. Experts suggest that these issues stem from bankers' extensive range of challenges. Fundamental issues in the Islamic banking system include overdue receivables, profit rates, bank fees, and their collection methods. Islamic banking aims to eliminate riba (interest) from the conventional banking system. However, removing riba, implementing Islamic banking, and meeting stakeholder expectations are distinct challenges that Islamic banking has faced in practising interest-free banking.

Globally, conventional banking systems operate based on interest rates, whereas in the Islamic banking system in the country, interest has paradoxically remained as a fixed component. Based on available information from the Iranian banking system and studies conducted in this field, this research evaluates the financial performance of dependency on profit rates and bank fees in selected Islamic banks in Iran, considering their financial performance and operational efficiency.

The structure of this article proceeds as follows: first, the literature review, including theoretical foundations and empirical background of the research, is presented. Then, the research methodology is explained. Subsequently, the data analysis is conducted, and finally, conclusions and a summary of the findings are provided.

2 Theoretical foundations of the study

The prohibition of riba (interest) in Islam, coupled with its significant role in economic discussions as a connecting factor between goods and services markets, the money market, and the balance of payments, has presented a critical challenge for Islamic societies and Muslims. Interest-free banking has emerged as a solution to this issue, and it is implemented in most Islamic countries and even in some non-Islamic countries, across entire nations or specific regions. Despite its challenges, constraints, and shortcomings, interest-free banking, as it exists today, offers advantages over interest-based banking [18]. Riba is unequivocally prohibited in Islam. The rationale for its prohibition lies in the adverse consequences of using saved money for interest-based purposes instead of converting it into an investment. Such practices lead to unemployment, inflation, economic imbalance, and social inequality. In the Islamic banking system, profit rates should be determined based on the performance of the real economy and the returns on investment rather than being tied to inflation rates. Under the Law of Interest-Free Banking Operations, setting profit rates on deposits and loans lies with the Monetary and Credit Council, which determines the banking profit rate annually. Implementing interest-free banking operations is challenging if these rates are based on inflation. The modern banking approach based on the Law of Interest-Free Banking Operations has been practiced in Iran for over 30 years. Despite encountering obstacles and challenges during this period, it has been recognized internationally as a novel banking system. Banks can create economic equilibrium if they allocate collected savings to planned investments. Increasing investments based on available savings strengthens the production sector, reduces unemployment, and curtails inflation. Conversely, if collected savings are allocated to consumption expenditures instead of investments, it disrupts economic balance, increases demand, and exacerbates inflation [3].

The prohibition of riba (interest) is universally acknowledged as one of the established tenets of Islam. However, there is no consensus on the exact nature of prohibited riba and its various types. Islamic traditions reference multiple instances classified as riba or interest, some of which do not seemingly align with their apparent characteristics. There is no doubt or ambiguity regarding the prohibition of riba in Islam. Islamic jurists, referencing Quranic verses, prophetic traditions, and the unanimous consensus among scholars, have unequivocally confirmed the prohibition of riba. When Islamic banking is discussed in the context of Islam, it is expected to adhere strictly to all Islamic principles, avoid any perspective outside the Islamic framework, and fully utilize Islamic capacities in its operation. Islamic banking is inherently interest-free, necessitating compliance with this principle in its commercial practices. In essence, profit sharing and associated risks are pivotal to Islamic banking, which inherently exposes it to a higher risk level than conventional banking. In interest-based banking, most financial instruments rely on interest, leading to interest rate fluctuations that significantly affect a bank's net income and net value. Conversely, interest is absent in interest-free banking due to the explicit prohibition of riba in Islamic rulings and its rejection in the Law of Interest-Free Banking Operations. Consequently, the Islamic banking system is inherently insulated from the risk of interest rate fluctuations.

The riba (usury) issue has long been recognized as a detrimental social and economic practice affecting societies throughout history. Whether Riba is paid or received, it is prohibited under Islamic law, disrupts economic relations, and creates imbalances in financial interactions within a society. In Islamic jurisprudence and legal texts, riba is

defined as the sale of one commodity for another of the same kind with an added condition in the case of measured or weighed items or as lending with an extension of the repayment period contingent upon an additional payment. Based on this definition, riba is categorized into transactional riba (riba al-buy), lending riba (riba al-card), and riba resulting from the extension of debt repayment periods. A common question among the public pertains to the permissibility of bank deposit returns. According to the 1983 Interest-Free Banking Law, the prohibition of lending riba in the context of deposits and earnings is addressed by ensuring that deposits in banks are not treated as loans. Instead, they are based on alternative contracts, such as agency agreements (wakala). In this arrangement, depositors entrust their funds to the bank under an agency contract, whereby the bank, acting as the agent, injects the funds into the economy through activities such as partnerships (mudarabah), lease-to-own agreements, and other permissible ventures. The profits generated from these ventures are then distributed, with the bank deducting its commission as the agent and remitting the remainder to the depositor. However, criticisms have been raised regarding the operational practices of banks, specifically in the context of such deposits, highlighting the need for scientific and practical solutions. Merely using the names of specific Islamic contracts in banking agreements does not suffice; instead, these contracts' fundamental framework and essential conditions must be strictly adhered to to address shortcomings [5].

The structure of Islamic financial instruments prohibits riba (interest) but allows other types of capital returns. In other words, any precondition for capital gains or declared debt is not permitted. According to Islamic principles, the implementation and utilization of capital in a project and job creation hold significant importance. Islamic banking is based on risk-sharing, physical trade of goods, direct involvement in commerce and labor, leasing, and construction contracts utilizing various Sharia-compliant agreements. Additionally, Islamic banking focuses on asset management to enhance public income. Risk-sharing and its management aim to establish a framework of cooperation and collaboration in project implementation, aligning with one of the core objectives of Islamic banking. Financial transactions permitted under Islamic law must be grounded in providing goods, services, or benefits. This approach is emphasized for better alignment and interaction between monetary and fiscal policies, contributing to more significant order and stability [14].

Maximizing shareholder wealth, increasing profits, fulfilling ethical duties, and meeting social responsibilities are considered among the most significant objectives of companies. Corporate governance is recommended as a means to preserve and enhance shareholder returns through purposeful leadership, the appointment of competent and capable management, and effective oversight [7]. In Iran, the Monetary and Credit Council determines profit rates administratively based on the inflation rate. Critics of the country's banking system argue that this approach is inconsistent with the essence of Islamic banking, which emphasizes profit-and-loss sharing. Islamic banking is inherently counter-cyclical, a feature that the current banking system in Iran fails to accommodate [12]. Currently operating under predetermined contractual frameworks outlined in the Interest-Free Banking Law, the Islamic and interest-free banking system is deemed inadequate for modern banking operations. Additionally, the currency circulated during the early Islamic period was backed by tangible value, unlike the fiat money prevalent in contemporary global banking systems. Fiat money lacks intrinsic value and differs fundamentally from the real money used in early Islamic societies, with its unique implications and rulings. Given that banking and its associated functions did not exist during the early Islamic era and are considered modern innovations, the relationships between depositors and banks, as well as between banks and borrowers, require contractual definitions tailored to align with the principles of Islamic banking [19].

3 Empirical background of the study

In line with the present research, various studies have been conducted domestically and internationally, some of which are summarized below:

Jarireh and Gheibipour [8] focused on the impact of banking financial ratios on changes in bank deposit returns, emphasizing the mediating role of credit distribution. The results indicated that the capital ratio, the loans-to-deposit ratio, and non-performing loans do not significantly affect changes in deposit returns. However, the operating cost-to-operating income ratio significantly influences changes in banking returns. Additionally, the loans-to-deposit ratio and non-performing loans significantly affect loan-related income through lending activities. In contrast, the capital adequacy ratio and the operating cost-to-operating income ratio do not significantly impact changes in loan-related income.

Eyvazlou and Baki Heskouei [6] examined the mechanism for determining bank profit rates in the Islamic Republic of Iran's monetary and banking system. Their findings revealed that, under normal conditions, pricing and administratively setting bank profit rates based on Islamic jurisprudence is prohibited and against the principles of Sharia. Based on their jurisprudential and economic findings, they proposed a framework for determining profit rates rooted

in justice and rights principles structured around an asset-based interbank market. Khosravi and Nadri [10] critiqued the theory of bank interest in Islamic banking studies, focusing on the role of money creation in determining interest rates. The results indicated that the theory of money creation does not align with the implications accepted by most Islamic banking theorists. In practice, money creation, whether in conventional or Islamic banking, generates a reserve market whose rate is unrelated to the real economy. Instead, it depends solely on the money-creation activities of commercial banks and the central bank. Bagheri and Dabbagh [2] examined the impact of banking factors on the financial performance of Islamic and conventional banking in selected Muslim countries. The results showed that Islamic banks outperformed conventional banks regarding profitability indicators using panel data regression analysis from 2010 to 2017. However, conventional banks demonstrated a relative advantage over Islamic banks regarding cost-to-income ratios and capital adequacy. Aziznejad [1] addressed the challenges and solutions for determining bank profit rates in Iran's economy and revealed two potential scenarios the central bank could implement. The first scenario involves the central bank setting a benchmark profit rate solely for deposit-taking and lending to banks. Banks would then determine their deposit and lending rates based on their internal capacities, economic conditions, market elasticity, and forecasts of revenue and expected profits for different depositor categories. An independent auditor must audit and approve these rates before they are publicly announced. The second scenario proposes determining profit rates based on the average annual returns of major economic sectors over a decade. In this approach, the central bank would set mid-term and long-term profit rates for exchange contracts (uqud mu'awadha) and deposit rates, aligning them with the specified sectoral returns during a defined time frame.

Rehman et al. [15] found that structural and relational capital efficiency are fundamental drivers of value in achieving high performance in Islamic banks. Conversely, human capital efficiency negatively impacts Islamic banks' performance. Bank size and foreign ownership also significantly drove Islamic banks' performance. Saeed et al. [16] examined the dependency of Islamic banking rates on conventional rates within a dual banking system, exploring the trade-off between religious principles and economic considerations. The findings showed that Islamic deposit and financing rates in Malaysia are influenced by conventional rates and the policy rates set by Bank Negara Malaysia. The results indicate that Islamic banks provide services that cater to profit-oriented customers. Šeho et al. [17] stated that sales-based and lease-based financing instruments negatively affect interest rates. The exposure to these instruments is enhanced in jurisdictions with more developed Islamic banking systems. However, risk-sharing instruments appear to be outside the influence of interest rates, except in less developed Islamic banking jurisdictions, where the impact is positive. Meslier et al. [11] analyzed a sample of 20 countries with dual banking systems from 2000 to 2014. The results highlighted significant differences in the drivers of pricing behavior between Islamic and conventional banks. Conventional banks with more substantial market power set lower deposit rates, whereas market power was not a significant factor for Islamic banks. In predominantly Muslim environments, conventional banks set higher deposit rates, and when their market power is weaker, they offer even higher deposit rates.

Reviewing the research background reveals that studies on Islamic banking have attracted significant attention from numerous researchers, resulting in extensive investigations from various perspectives. However, this study evaluates the financial performance of the dependency on profit rates and fees in selected Islamic banks in Iran, considering profit rates, fees, and financial performance as the research variables. Based on the theoretical foundations and empirical background presented, the research hypotheses are formulated as follows:

Hypothesis (1): Islamic money market rates, being asset-backed and interest-free, are independent of conventional money market rates and monetary policy rates.

If a relationship exists between monetary policy and Islamic money market rates, it indicates incomplete segregation within the regulatory framework, necessitating further efforts to align monetary policy with Islamic principles. In this study, customers of Islamic banks are presumed to have accepted the rules governing transactions in Islamic banks, which may conflict with the efficient market contracts. Based on these arguments, the following hypothesis is proposed:

Hypothesis (2): Holders of investment accounts generally accept the rules governing transactions in Islamic banks, and Islamic investment deposit rates, being asset-backed and interest-free, are independent of fixed conventional deposit rates aligned with maturity and monetary policy rates.

4 Research methodology

Considering the practical applicability of the research findings, this study is classified as applied research in terms of its purpose. Furthermore, the method and manner of data collection fall within the domain of exploratory studies. The research evaluates the financial performance of profit rate dependency in Islamic banks in Iran.

A library-based approach was adopted to review the research literature, utilizing theses, articles, and credible

scientific studies available through reputable online resources such as Civilica, ScienceDirect, and Google Scholar. This study analyzes time-series data spanning from Farvardin 1388 to the end of Tir 1403, corresponding to March 21, 2009, to July 21, 2024. The study employs the Nonlinear Autoregressive Distributed Lag (NARDL) approach for data analysis. All analyses will be conducted using EViews software, version 13.

Table 1: Variables

Variable	Symbol	Description	Source
Overnight Policy Rate	(OPR)	Interbank policy rate	Central Bank
Islamic Money Market Rate	(OVNIB)	Overnight Islamic money market rate	Central Bank
Conventional Money Market Rate	(OVNCB)	Overnight Conventional Money Market Rate	European Central Bank
Fixed Deposit Rate, Conventional Banks (1-month)	(1FDCB)	1-month fixed deposit rate in conventional banks	Euribor-Rates.eu
Fixed Deposit Rate, Conventional Banks (3-month)	(3FDCB)	3-month fixed deposit rate in conventional banks	Euribor-Rates.eu
Fixed Deposit Rate, Conventional Banks (6-month)	(6FDCB)	6-month fixed deposit rate in conventional banks	Euribor-Rates.eu
Fixed Deposit Rate, Conventional Banks (9-month)	(9FDCB)	9-month fixed deposit rate in conventional banks	Euribor-Rates.eu
Fixed Deposit Rate, Conventional Banks (12-month)	(12FDCB)	12-month fixed deposit rate in conventional banks	Euribor-Rates.eu
Investment Deposit Rate, Islamic Banks (1-month)	(1IDIB)	1-month Islamic Banks' Investment Deposit	Central Bank
Investment Deposit Rate, Islamic Banks (3-month)	(3IDIB)	3-month Islamic Banks' Investment Deposit	Central Bank
Investment Deposit Rate, Islamic Banks (6-month)	(6IDIB)	6-month Islamic Banks' Investment Deposit	Central Bank
Investment Deposit Rate, Islamic Banks (9-month)	(9IDIB)	9-month Islamic Banks' Investment Deposit	Central Bank
Investment Deposit Rate, Islamic Banks (12-month)	(12IDIB)	12-month Islamic Banks' Investment Deposit	Central Bank

Table 2: Models

Dynamic Regressors	Dependent Variable	Model
Overnight Policy Rate (OPR)	Conventional Overnight Money Market Rate (OVNCB)	Islamic Overnight Money Market Rate (OVNIB)
Islamic Overnight Money Market Rate (OVNIB)	3-Month Fixed Deposit Rate, Conventional Banks (3FDCB)	3-Month Investment Deposit Rate, Islamic Banks (3IDIB)
Islamic Overnight Money Market Rate (OVNIB)	6-Month Fixed Deposit Rate, Conventional Banks (6FDCB)	6-Month Investment Deposit Rate, Islamic Banks (6IDIB)
Islamic Overnight Money Market Rate (OVNIB)	9-Month Fixed Deposit Rate, Conventional Banks (9FDCB)	9-Month Investment Deposit Rate, Islamic Banks (9IDIB)
Islamic Overnight Money Market Rate (OVNIB)	12-Month Fixed Deposit Rate, Conventional Banks (12FDCB)	12-Month Investment Deposit Rate, Islamic Banks (12IDIB)

Table 2 illustrates the variables utilized in each model. Three primary models have been estimated. Model 1 examines the relationship between conventional money market rates and the overnight policy rate (OPR) concerning Islamic money market rates. Models 2a through 2d explore the effects of conventional fixed deposit rates and Islamic money market rates on Islamic investment deposit rates. Five maturity clusters for deposits are matched to validate Model 2.

Model 1: Effects of Conventional Money Market Rates on Islamic Money Market Rates

This model primarily tests Hypothesis (1) to investigate the relationships between the Islamic Overnight Money Market Rate (OVNIB) and the Conventional Overnight Money Market Rate (OVNCB) as well as the Overnight Policy Rate (OPR). Monthly data for OVNIB is collected by the Central Bank of the Islamic Republic of Iran based on daily rates for investments in the Islamic money market at the end of each corresponding month. Monthly data for OVNCB represents interbank conventional deposit rates at the end of each month. Previous studies have shown that the federal funds rate (or OPR for Iran) better indicates monetary policy stance [9, 13]. Therefore, this model utilizes the OPR as the monetary policy rate.

OPR is the target rate for the daily liquidity operations of the Central Bank of the Islamic Republic of Iran. It serves as the primary benchmark for setting market interest rates and represents the rate at which major financial institutions borrow and lend to one another overnight. This model tests whether OPR affects OVNIB, a set of Sharia-compliant instruments and whether the conventional and Islamic money markets operate independently. The first

hypothesis test is stated as follows:

$$(OVINB)_{it} = (B0)_{it} + (OVNCB)_{it} + (OPR)_{it} + (U)_{it}. \tag{4.1}$$

By rewriting the above equation in an error correction form and decomposing the independent variables into positive and negative fluctuations, it is possible to estimate the nonlinear (asymmetric) short-term and long-term effects of positive and negative shocks. Accordingly, the research model is specified as follows:

$$\Delta(OVINB)_{it} = \mu + \rho\Delta OVINB_{t-1} + \gamma^+ OVNCB_{t-1}^+ + \gamma^- OVNCB_{t-1}^- + \theta^+ OPR_{t-1}^+ + \theta^- OPR_{t-1}^-$$
$$+ \sum_{j=1}^{p-1} w_j \Delta OVINB_{t-1} + \sum_{ij=0}^{q-1} \left(g^+ \Delta OVNCB_{t-1}^+ + g^- \Delta OVNCB_{t-1}^- \right)$$
$$+ \sum_{ij=0}^{q-1} \left(g^+ \Delta OPR_{t-1}^+ + g^- \Delta OPR_{t-1}^- \right) + e_t, \tag{4.2}$$

in which,

- Δ: Indicates first differences or changes in the variable.

- $\Delta(OVINB)_{it}$: Change in the Islamic overnight money market rate (dependent variable) at time t.

- μ: Constant term (intercept).

- $\rho\Delta OVINB_{t-1}$: Coefficient of lagged changes in the Islamic overnight money market rate.

- $\gamma^+ OVNCB_{t-1}^+$: Coefficient of positive shocks in the lagged conventional overnight money market rate (independent variable).

- $\gamma^- OVNCB_{t-1}^-$: Coefficient of negative shocks in the lagged conventional overnight money market rate.

- $\theta^+ OPR_{t-1}^+$: Coefficient of positive shocks in the lagged overnight policy rate (independent variable).

- $\theta^- OPR_{t-1}^-$: Coefficient of negative shocks in the lagged overnight policy rate.

- $g^+ \Delta OVNCB_{t-1}^+$: Coefficient of lagged positive changes in the conventional overnight money market rate.

- $g^- \Delta OVNCB_{t-1}^-$: Coefficient of lagged negative changes in the conventional overnight money market rate.

- $g^+ \Delta OPR_{t-1}^+$: Coefficient of lagged positive changes in the overnight policy rate.

- $g^- \Delta OPR_{t-1}^-$: Coefficient of lagged negative changes in the overnight policy rate.

- e_t: Error term.

Model (2): Effects of Conventional Fixed Deposit Rates on the Profit Rates of Islamic Investment Deposits

Hypothesis 2 is tested using Model 2, which examines the relationships between Islamic investment deposit rates with various maturities (IDIB) (1-month, 3-month, 6-month, 9-month, and 12-month) and their corresponding conventional fixed deposit rates (FDCB) and OVNIB. IDIBs represent time-deposit profit rates reported by the Central Bank of the Islamic Republic of Iran. OVNIB is a proxy for each maturity's monetary policy rate. The test of hypothesis 2 is stated as follows:

$$(IDIB)_{it} = (B0)_{it} + (FDCB)_{it} + (OVNIB)_{it} + (U)_{it}. \tag{4.3}$$

The Model (2) can be expressed in an error correction form by decomposing the independent variables into positive and negative fluctuations, which allows for estimating nonlinear (asymmetric) short-term and long-term effects of positive and negative shocks. The research model is specified as follows:

$$\Delta(IDIB)_{it} = \mu + \rho\Delta IDIB_{t-1} + \gamma^+ FDCB_{t-1}^+ + \gamma^- FDCB_{t-1}^- + \theta^+ OVNIB_{t-1}^+ + \theta^- OVNIB_{t-1}^-$$
$$+ \sum_{j=1}^{p-1} w_j \Delta IDIB_{t-1} + \sum_{ij=0}^{q-1} \left(g^+ \Delta FDCB_{t-1}^+ + g^- \Delta FDCB_{t-1}^- \right)$$
$$+ \sum_{ij=0}^{q-1} \left(g^+ \Delta OVNIB_{t-1}^+ + g^- \Delta OVNIB_{t-1}^- \right) + e_t, \tag{4.4}$$

in which,

- Δ: Indicates first differences or changes in the variable.

- $\Delta(IDIB)_{it}$: Change in the Islamic overnight money market rate (dependent variable) at time t.

- μ: Constant term (intercept).

- $\rho\Delta IDIB_{t-1}$: Coefficient of lagged changes in the Islamic overnight money market rate.

- $\gamma^+ FDCB_{t-1}^+$: Coefficient of positive shocks in the lagged conventional overnight money market rate (independent variable).

- $\gamma^- FDCB_{t-1}^-$: Coefficient of negative shocks in the lagged conventional overnight money market rate.

- $\theta^+ OVNIB_{t-1}^+$: Coefficient of positive shocks in the lagged overnight policy rate (independent variable).

- $\theta^- OVNIB_{t-1}^-$: Coefficient of negative shocks in the lagged overnight policy rate.

- $g^+ \Delta FDCB_{t-1}^+$: Coefficient of lagged positive changes in the conventional overnight money market rate.

- $g^- \Delta FDCB_{t-1}^-$: Coefficient of lagged negative changes in the conventional overnight money market rate.

- $g^+ \Delta OVNIB_{t-1}^+$: Coefficient of lagged positive changes in the overnight policy rate.

- $g^- \Delta OVNIB_{t-1}^-$: Coefficient of lagged negative changes in the overnight policy rate.

- e_t: Error term.

5 Research findings

5.1 Stationarity test

In econometric analysis, it is essential to test the stationarity of variables before estimating the model. The Augmented Dickey-Fuller (ADF) test is applied to check for the presence of a unit root in the time-series data. The results are presented in Table 3. The null hypothesis (H_0) of the ADF test posits the presence of a unit root, indicating non-stationarity, against the alternative hypothesis (H_1), which suggests stationarity. If the p-value is less than 5%, the null hypothesis of a unit root can be rejected at the 95% confidence level, confirming the stationarity of the variable.

Table 3: Stationarity Test Results for Research Variables

Variable	Test Level	Test Statistic	Significance Level	Result
OVNCB	At Level	-4.18	0.0009	Stationary at Level
FDCB1	At Level	-3.22	0.0200	Stationary at Level
FDCB3	At Level	-3.79	0.0035	Stationary at Level
OPR	At Level	-3.52	0.0001	Stationary at Level
FDCB12	At Level	-3.07	0.0303	Stationary at Level
FDCB6	At Level	-2.56	0.1030	Non-stationary
	First Difference	-10.48	0.0000	Stationary at First Difference
FDCB9	At Level	-2.67	0.0808	Non-stationary
	First Difference	-16.50	0.0000	Stationary at First Difference
OVNIB	At Level	-1.47	0.5425	Non-stationary
	First Difference	-13.43	0.0000	Stationary at First Difference
IDIB1	At Level	-1.47	0.5425	Non-stationary
	First Difference	-13.43	0.0000	Stationary at First Difference
IDIB3	At Level	-1.71	0.4217	Non-stationary
	First Difference	-13.42	0.0000	Stationary at First Difference
IDIB6	At Level	-1.47	0.5430	Non-stationary
	First Difference	-13.44	0.0000	Stationary at First Difference
IDIB9	At Level	-1.82	0.3675	Non-stationary
	First Difference	-13.42	0.0000	Stationary at First Difference
IDIB12	At Level	-1.57	0.4955	Non-stationary
	First Difference	-13.44	0.0000	Stationary at First Difference

Analysis Based on Table 3

Table 3 shows that variables such as OVNCB (overnight deposit rate in percentage), FDCB1 (1-month fixed deposit rate in percentage), FDCB3 (3-month fixed deposit rate in percentage), FDCB12 (12-month fixed deposit rate in percentage), and OPR (overnight policy rate in percentage) are stationary at the level, as their significance levels are below the 0.05 threshold. The remaining variables become stationary after the first differencing.

5.2 Hypothesis 1 Testing

To estimate the model for testing Hypothesis 1, the number of lags is set to automatic selection with a maximum of three lags. Additionally, the Bounds Test approach evaluates the possibility of a long-term relationship. At this stage, the methodology proposed by Pesaran et al. [13] is employed. The presence of a long-term relationship among the variables is tested by examining the significance of lagged levels of variables in the error correction model using the F-statistic. To determine whether a long-term relationship exists:

If the F-statistic is less than the lower bound [I(0)], the null hypothesis of no long-term relationship cannot be rejected, and no long-term relationship exists.

If the F-statistic is greater than the upper bound [I(1)], the null hypothesis is rejected, indicating the presence of a long-term relationship.

If the F-statistic lies between the two bounds, no definitive conclusion can be drawn about the existence of a long-term relationship.

The results of this test are presented in Table 4.

Table 4: F-Bounds Test Results (∗: Optimal number of lags selected using the Schwarz Bayesian Criterion (SBC).)

Significance Level	Critical Value I(1)	Critical Value I(0)	Lag	F-Statistic
99%	5.06	3.74	3*	11.99
95%	4.01	2.86		

Interpretation of Table 4 Results

Based on the results in Table 4, the F-statistic (11.99) is greater than the upper critical bound (I(1)) at both the 99% and 95% significance levels. Thus, the null hypothesis of no long-term relationship between the variables is rejected. Consequently, there is evidence of a long-term equilibrium relationship at 99% and 95% confidence levels for the model under investigation.

5.3 Model 1 estimation results

The estimation results for Model 1 are presented in Table 5:

Table 5: Estimation Results for Hypothesis 1 Test

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Long-Term Coefficients				
OVNIB(-1)	-0.0890	0.0336	-2.6473	0.0089
@CUMDP(OVNCB(-1))	-0.2952	0.1700	-1.7370	0.0843
@CUMDN(OVNCB(-1))	-0.2146	0.1641	-1.3072	0.1930
@CUMDP(OPR(-1))	0.0262	0.0148	1.7702	0.0486
@CUMDN(OPR(-1))	0.0254	0.0119	2.1269	0.0350
Short-Term Coefficients				
@DCUMDP(OVNCB)	0.4975	0.2080	2.3920	0.0179
@DCUMDN(OVNCB)	-0.2618	0.5598	-0.4677	0.6406
@DCUMDN(OPR)	0.1539	0.0625	2.4637	0.0148
@DCUMDP(OPR(-1))	0.1561	0.0551	2.8323	0.0052
@DCUMDN(OPR(-3))	-0.1466	0.0658	-2.2274	0.0273
C	0.4580	0.2236	2.0485	0.0421
COINTEQ*	-0.0890	0.0278	-3.1966	0.0016
R-squared			0.80	
Adjusted R-squared			0.76	
Durbin-Watson stat			1.98	
F-statistic			10.67	
Prob(F-statistic)			0.0000	

The results of Model 1 indicate that the long-term coefficients for OVNCB are statistically insignificant, while in the short term, they are significant at the 0.05 error level. Additionally, the coefficients for OPR are statistically significant at the 0.05 error level in both the long and short term. Therefore, the rates of Islamic banks reflected in OVNIB are linked to OPR and OVNCB and, consequently, to interest rates. These findings reject Hypothesis (1), suggesting that, contrary to the assumption, the two banking systems are interconnected, which aligns with the results of Saeed et al. [16]. After estimating the model, the next objective is to evaluate the validity of the assumptions regarding the asymmetry of relationships between the variables. For this purpose, the Wald Test is employed. The results of this test are presented in Table 6. Since the p-values for the short-term and long-term F-statistics in Table 6 are less than 0.05, the null hypothesis of symmetric effects is rejected, which allows for analyzing the differential impacts of positive and negative shocks in conventional and monetary policy rates on Islamic money market rates. Thus, it can be claimed that the null hypothesis of symmetric effects of positive and negative shocks in conventional money market rates and monetary policy rates on Islamic money market rates is rejected in both the short and long term, which implies that the impact of positive shocks in conventional and monetary policy rates on Islamic money market rates differs from negative shocks in both the short and long term.

Table 6: Results of the Wald Test for Asymmetric Effects

Test	Statistic	p-Value	Conclusion
F	3.4310	0.0032	Asymmetry Exists
Chi-square	20.2861	0.0021	Asymmetry Exists

Interpretation

The results in Table 6 confirm the rejection of the null hypothesis of symmetric effects.

5.4 Hypothesis 2 Testing

The number of lags is automatically selected with a maximum of three to estimate the models for Hypothesis 2. The Bounds Test is used to evaluate the possibility of a long-term relationship, and the results are presented in Table 7.

Table 7: F-Bounds Test Results (∗: Optimal number of lags selected using the Schwarz Bayesian Criterion (SBC).)

Model 2a (IDIB3)				
Significance Level	**Critical Value I(1)**	**Critical Value I(0)**	**Lag**	**F-Statistic**
99% level	5.06	3.74	3*	11.99
95% level	4.01	2.86		
Model 2b (IDIB6)				
Significance Level	**Critical Value I(1)**	**Critical Value I(0)**	**Lag**	**F-Statistic**
99% level	5.06	3.74	3*	13.13
95% level	4.01	2.86		
Model 2c (IDIB9)				
Significance Level	**Critical Value I(1)**	**Critical Value I(0)**	**Lag**	**F-Statistic**
99% level	5.06	3.74	3*	11.66
95% level	4.01	2.86		
Model 2d (IDIB12)				
Significance Level	**Critical Value I(1)**	**Critical Value I(0)**	**Lag**	**F-Statistic**
99% level	5.06	3.74	3*	11.23
95% level	4.01	2.86		

Based on the results in Table 7, the F-statistic exceeds the upper critical bound, indicating that the null hypothesis of no long-term relationship between the variables is rejected. Therefore, a long-term equilibrium relationship exists at the 99% and 95% confidence levels for the model under investigation. The results of the second model estimation are presented in Tables 8 to 11:

The results of Model 2a indicate that both long-term coefficients for FDCB3 and OVNIB are statistically significant at the 0.05 error level. The short-term coefficient for OVNIB is also statistically significant at the 0.05 error level, suggesting that most investment account holders are profit-oriented customers. Conventional fixed deposit rates influence the Islamic investment deposit rate due to competition between Islamic and conventional banking sectors. Moreover, since OPR determines the Islamic money market rate, the Islamic investment deposit rate is also affected by interest rates via the Islamic money market in both the long and short term. Consequently, these rates are neither

Table 8: Estimation of the second hypothesis test model (Model a2)

Variable	Coefficient	SD	t-Statistic	Probability
Long-Term Coefficients				
IDIB3(-1)	-0.1012	0.0446	-2.2672	0.0246
@CUMDP(FDCB3)	0.4322	0.1751	2.4687	0.0145
@CUMDN(FDCB3)	-0.0803	0.1064	-0.7545	0.4516
@CUMDP(OVNIB(-1))	0.0650	0.0391	1.6619	0.0983
@CUMDN(OVNIB(-1))	0.2582	0.1003	2.5738	0.0109
Short-Term Coefficients				
@DCUMDP(OVNIB)	1.1517	0.3306	3.4835	0.0006
@DCUMDN(OVNIB)	0.2628	0.0745	3.5274	0.0005
C	1.0778	0.4444	2.4255	0.0163
COINTEQ*	-0.1012	0.0252	-4.0021	0.0000
R-squared			0.71	
Adjusted R-squared			0.68	
Durbin-Watson stat			1.96	
F-statistic			9.14	
Prob(F-statistic)			0.00	

fully asset-backed nor interest-free, leading to the rejection of Hypothesis 2b. These findings align with the results of Saeed et al. [16].

Table 9: Estimation Results for Hypothesis 2 Test (Model 2b)

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Long-Term Coefficients				
IDIB6(-1)	-0.0544	0.0237	-2.2992	0.0227
@CUMDP(FDCB6(-1))	0.3939	0.1353	2.9116	0.0041
@CUMDN(FDCB6(-1))	0.1839	0.1190	1.5459	0.1240
@CUMDP(OVNIB(-1))	0.0889	0.0579	1.5350	0.1267
@CUMDN(OVNIB(-1))	0.1752	0.0644	2.7218	0.0072
Short-Term Coefficients				
@DCUMDP(FDCB6(-1))	-0.4616	0.2301	-2.0063	0.0464
@DCUMDN(FDCB6(-1))	0.9470	0.5040	1.8791	0.0420
@DCUMDP(FDCB6(-2))	0.6989	0.3407	2.0514	0.0418
@DCUMDP(OVNIB)	1.0934	0.1309	8.3507	0.0000
@DCUMDN(OVNIB)	0.1983	0.1341	1.4785	0.1412
C	1.2554	0.4437	2.8293	0.0052
COINTEQ*	-0.0544	0.0163	-3.3382	0.0010
R-squared			0.75	
Adjusted R-squared			0.71	
Durbin-Watson stat			2.01	
F-statistic			13.45	
Prob(F-statistic)			0.0000	

The results of Model 2b indicate that both short-term and long-term coefficients for FDCB6 and OVNIB are statistically significant at the 0.05 error level, suggesting that most investment account holders are profit-oriented customers. Conventional fixed deposit rates influence the Islamic investment deposit rate due to competition between the Islamic and conventional banking sectors. Furthermore, since OPR determines the overnight rate in the Islamic money market, the Islamic investment deposit rate is also affected by interest rates through the Islamic money market in both the short and long term. As a result, these rates are neither fully asset-backed nor interest-free, leading to the rejection of Hypothesis 2c. These findings align with the results of Saeed et al. [16].

The results of Model 2c indicate that both long-term coefficients for FDCB9 and OVNIB are statistically insignificant. However, the short-term coefficients for OVNIB are statistically significant at the 0.05 error level, which implies that the Islamic bank rates reflected in IDIB9 are linked to OVNIB and, consequently, to interest rates. Contrary to expectations, this establishes a connection between the two banking systems. These findings lead to the rejection of Hypothesis 2d. Additionally, these results do not align with the findings of Saeed et al. [16].

The results of Model 2d indicate that both short-term and long-term coefficients for FDCB12 and OVNIB are statistically significant at the 0.05 error level, suggesting that most investment account holders are profit-oriented customers. Conventional fixed deposit rates influence the Islamic investment deposit rate due to competition between the Islamic and conventional banking sectors. Furthermore, since OPR determines the Islamic money market rate, the Islamic investment deposit rate is also affected by interest rates through the Islamic money market in both the

Table 10: Estimation Results for Hypothesis 2 Test (Model 2c)

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Long-Term Coefficients				
IDIB9(-1)	-0.0370	0.0222	-1.6632	0.0981
@CUMDP(FDCB9)	0.1577	0.0935	1.6864	0.0935
@CUMDN(FDCB9)	0.0965	0.0803	1.2018	0.2311
@CUMDP(OVNIB(-1))	0.0317	0.0382	0.8305	0.4074
@CUMDN(OVNIB(-1))	0.0519	0.0411	1.2630	0.0283
Short-Term Coefficients				
@DCUMDP(OVNIB)	1.0174	0.1235	8.2407	0.0000
@DCUMDN(OVNIB)	0.1391	0.0820	1.6960	0.0917
C	0.6612	0.3066	2.1565	0.0324
COINTEQ*	-0.0370	0.1411	-2.6210	0.0095
R-squared			0.40	
Adjusted R-squared			0.37	
Durbin-Watson stat			2.01	
F-statistic			10.89	
Prob(F-statistic)			0.0000	

Table 11: Estimation Results for Hypothesis 2 Test (Model 2d)

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Long-Term Coefficients				
IDIB12(-1)	-0.0357	0.0157	-2.2768	0.0241
@CUMDP(FDCB12(-1))	0.2468	0.1138	2.1679	0.0316
@CUMDN(FDCB12(-1))	0.0977	0.1001	0.9756	0.3307
@CUMDP(OVNIB(-1))	0.0179	0.0490	0.3656	0.0151
@CUMDN(OVNIB(-1))	0.0831	0.0548	1.5155	0.0315
Short-Term Coefficients				
@DCUMDP(FDCB12(-1))	1.2150	0.2771	4.3840	0.0000
@DCUMDN(FDCB12(-1))	0.2726	0.5573	0.4890	0.0254
@DCUMDP(OVNIB)	1.5510	0.1174	13.2081	0.0000
@DCUMDN(OVNIB)	0.1148	0.1203	0.9538	0.3415
C	0.7990	0.3576	2.2345	0.0268
COINTEQ*	-0.0356	0.0119	-2.9725	0.0033
R-squared			0.84	
Adjusted R-squared			0.81	
Durbin-Watson stat			2.02	
F-statistic			27.65	
Prob(F-statistic)			0.0000	

short and long term. As a result, these rates are neither fully asset-backed nor interest-free, leading to the rejection of Hypothesis 2e. These findings do not align with the results of Saeed et al. [16]. After estimating the model, another goal is to examine the validity of the assumptions regarding the asymmetry of the relationship between the variables. For this purpose, the Wald test is used. The results of this test are presented in Table 12:

Table 12: Wald Test Results for Asymmetry Analysis

Model	Test	Statistic	p-Value	Conclusion
2a	F	4.9192	0.0001	Asymmetry Confirmed
	Chi-square	29.5152	0.0000	Asymmetry Confirmed
2b	F	13.2911	0.0000	Asymmetry Confirmed
	Chi-square	79.7470	0.0000	Asymmetry Confirmed
2c	F	11.6676	0.0000	Asymmetry Confirmed
	Chi-square	12.7739	0.0000	Asymmetry Confirmed
2d	F	11.2375	0.0000	Asymmetry Confirmed
	Chi-square	11.3364	0.0000	Asymmetry Confirmed

Based on the results of Table 12, asymmetric effects are confirmed.

6 Discussion and conclusion

The findings have indicated that, firstly, the overnight policy rate linked to the central bank's interest rate serves as a significant positive and negative determinant for the Islamic money market rate in both the short and long term.

Similarly, the conventional money market rate also acts as a significant positive and negative determinant for the Islamic money market rate in the short term. Secondly, this study examines maturity-matched rates, and the results demonstrate significant positive and negative impacts of conventional rates on Islamic rates in both the short and long term. The overnight Islamic money market rate, utilized as a proxy for the monetary policy rate, exerts a significant positive and negative influence on Islamic deposit rates in the short and long term. Consistent with prior studies indicating that Islamic rates are rarely linked to project performance, this research has established that customer religiosity does not play a significant role in this relationship. The profit-oriented nature of customers is identified as a notable behavioral factor in the Islamic banking market, particularly within a dual banking system. Unlike the principles of an interest-based market, Islamic banks must distinguish and classify their customers into Sharia-compliant and profit-oriented categories to comply with Islamic teachings. However, achieving this in a dual banking system is challenging and complex. Due to competition with the conventional banking system and the widespread presence of profit-oriented customers compared to Sharia-compliant customers, Islamic banks are compelled to provide services primarily to profit-oriented customers. These customers often exploit arbitrage opportunities arising from the differences between the rates offered in the dual banking system, forcing Islamic banks to act contrary to religious teachings to remain competitive.

Islamic banks can reduce reliance on trade-based financing methods (exchange contracts) and increase financing based on profit-and-loss sharing (PLS) mechanisms. To ensure the success of this policy, managers should first assess the risk exposure of investment account holders, evaluate the feasibility and prospects of investment projects, and demonstrate a greater willingness to invest in long-term projects. Policymakers must identify strategies to address arbitrage opportunities between the two interbank markets. Additionally, instruments offered in the Islamic money market should be asset-backed and interest-free. When formulating regulations and altering monetary policy stances, policymakers should recognize and address Islamic banks' specific vulnerabilities compared to conventional banks, particularly regarding reallocating resources and funds and their subsequent impact on profitability.

Identifying the impact of interest rates on the performance of Islamic banks is key to understanding the role of these institutions in financial stability, designing effective monetary policies, and developing appropriate risk management strategies for these entities. Customers who deposit funds in investment accounts are primarily motivated by profit. However, Muslims are expected to make economic decisions guided by Islamic teachings, which dictate that profit maximization should not be the sole factor in forming relationships with Islamic banks. Unfortunately, Islamic banks have not developed in the direction envisioned by Islamic scholars, which issue is influenced by government policies in the financial sector and the dual competitive environment of Islamic and conventional banks. Governments should not consider interest rates as a primary factor in determining bank deposit rates within their policies. Instead, they should adopt policies that address the Islamic community's financial and spiritual needs, fostering the development of Islamic banking systems capable of competing effectively with conventional banking in the economy.

Most countries where Islamic banks operate follow a fixed exchange rate policy, which has significant implications for implementing monetary policy. In such countries, the exchange rate serves as the primary nominal anchor and a key tool for liquidity management, while controlling systemic liquidity remains a critical determinant of monetary policy effectiveness and exchange rate stability. However, Islamic banks in many of these countries often experience excess liquidity. Proper management of this surplus liquidity is essential to enhance the effectiveness of monetary policy within the Islamic banking system. When the interest rate channel is effective, monetary transmission can occur from the conventional to the Islamic financial sector. However, such a transfer might not be acceptable to all religious scholars, as it depends on various factors, including the behavior of consumers and Islamic banks, their responses to changes in interest rates, and the level of development in Islamic money markets. A dual approach to monetary policy might be necessary in dual financial systems where the Islamic financial sector is less developed than its conventional counterpart. In such cases, it may not be feasible to establish a unified framework for managing the country's financial system effectively. However, many issues and challenges related to Islamic financial instruments, markets, and regulations must be addressed. A complete Islamic financial system, with its identifiable instruments and markets, is still in the early stages of development. Therefore, Islamic banks must quickly differentiate their performance from conventional banking by offering innovative financial instruments to compete within a dual banking system, which may allow Islamic banking to achieve its rightful place in the global economic system.

References

[1] S. Aziznejad, *Challenges and practical solutions for determining bank interest rate in Iranian economy*, Majlis Rahbord **19** (2012), no. 71, 181–200. [In Persian]

[2] A. Bagheri and R. Dabbagh, *The impact of banking factors on the financial performance of Islamic and con-*

ventional banking in selected Muslim countries, Second Nat. Conf. Mod. Res. Manag. Law, Kazeroon, 2018. [In Persian]

[3] R. Bashardoost, M. Derakhshandeh, and N. Merivani, *Examining the status of banking fees from economic, legal, and jurisprudential perspectives*, Fifth Int. Conf. Relig. Res. Islamic Sci. Jurisprud. Law in Iran and the Islamic World, Tehran, 2021.

[4] B.S. Bernanke and A.S. Blinder, *Credit, money, and aggregate demand*, Amer. Econ. Rev. **78** (1988), no. 2, 435–439.

[5] M.K. Dimasi and S.J. Hashemi, *Comparative analysis of usury and bank deposit profits*, Fourth Nat. Conf. Efficien. Eval. Law Islamic Republic of Iran, Meybod, 2017. [In Persian]

[6] H. Eyvazlou and M. Baky Haskouee, *The mechanism of profit rate formation in Iranian banking system*, Econ. Stud. Polic. J. **7** (2020), no. 2, 165–186. [In Persian]

[7] M. Hashemkhani, *Examining risks in Islamic banking and their relationship with corporate governance in banks*, Third Int. Conf. Modern Dev. Manag. Econ. Account., Tehran, 2019. [In Persian]

[8] M. Jarireh and S. Gheibipour, *The impact of banking financial ratios on changes in deposit interest rates with emphasis on the intermediating role of credit allocation (lending): A case study of banks listed on the Tehran Stock Exchange*, Seventh Int. Conf. Manag. Account. Econ. Dev., 2021. [In Persian]

[9] A.K. Kashyap and J.C. Stein, *What do a million observations on banks say about the transmission of monetary policy?*, Amer. Econ. Rev. **90** (2000), no. 3, 407–428.

[10] M. Khosravi and K. Nadri, *A critique of the bank interest theory in Islamic banking studies, focusing on the impact of money creation on interest rate determination*, Islamic Econ. Stud. Bi-quart. J. **12** (2020), no. 2, 1–34. [In Persian]

[11] C. Meslier, T. Risfandy, and A. Tarazi, *Dual market competition and deposit rate setting in Islamic and conventional banks*, Econ. Modell. **63** (2017), 318–333.

[12] S.R. Mirebrahimi, B. Akbari Moghaddam, S.F. Fakhrehosseini, and A. Mirzapour Babajan, *Examining the reaction of inflation to contractionary monetary policy in Iran's Islamic banking system based on a stochastic dynamic general equilibrium model*, J. Econ. Essays: Islamic Approach **16** (2019), no. 31, 111–136. [In Persian]

[13] M.H. Pesaran, Y. Shin, and R.J. Smith, *Testing for the'Existence of a Long-run Relationship'*, Faculty of Economics, University of Cambridge, 1996.

[14] M. Ramezani, *The role of Islamic banking in economic growth during the year of production leap*, Eighth Nat. Conf. Manag. Human. Res. Iran, Tehran, 2020. [In Persian]

[15] A.U. Rehman, E. Aslam, and A. Iqbal, *Intellectual capital efficiency and bank performance: Evidence from Islamic banks*, Borsa Istanbul Rev. **22** (2022), no. 1, 113–121.

[16] S.M. Saeed, I. Abdeljawad, M. Kabir Hassan, and M. Rashid, *Dependency of Islamic bank rates on conventional rates in a dual banking system: A trade-off between religious and economic fundamentals*, Int. Rev. Econ. Finance **86** (2023), 1003–1021.

[17] M. Šeho, O. Ismath Bacha and E. Smolo, *The effects of interest rate on Islamic bank financing instruments: Cross-country evidence from dual-banking systems*, Pacific-Basin Finance J. **62** (2020), 101292.

[18] K. Sohaili, *Theoretical comparison of usury forbidden and usury free banking efficiency in mobilization and allocation of resources*, Islamic Econ. Stud. Bi-quart. J. **1** (2008), no. 1, 113–138. [In Persian]

[19] M. Talebi, *Introduction to an alternative paradigm for the induced paradigm in Islamic banking*, Islamic Financ. Res. **8** (2018), no. 1, 91–116. [In Persian]

[20] M. Zamani Nasab, F. Khosravi and S.S. Miri, *Islamic banking and its impact on economic growth*, Eleventh Int. Conf. Modern Manag. Account. Econ. Bank. Strateg. Focus. Bus. Growth, 2021. [In Persian]