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Determinants of Growth in the Banking Sector: Time Series Analysis of Conventional and Islamic Banking in Pakistan

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Abstract

A well-developed financial and banking system efficiently transforms savings into investments. The banking system of Pakistan is based on a dual structure of conventional and Islamic banking. The current study aims to identify the factors that determine growth in the banking industry of Pakistan, keeping in view both conventional and Islamic banking. For this purpose, the ARDL model was applied on the time series data of Pakistan for the period 2007-2022. The data was taken from the State Bank of Pakistan (SBP). The variable 'investment' was used as a proxy to measure growth in the banking sector, comprising both conventional and Islamic banking sectors. The results of the empirical analysis indicated that growth in deposit, growth in GDP, and population growth are the main determinants of growth in the banking sector of Pakistan. Based on the findings of the study it is suggested that measures must be taken to increase deposits in both systems of banking by giving various incentives to households.

***Keywords*:** conventional banking, financial performance, Islamic banking, investments, savings

JEL Codes: E44, G21

Introduction

Financial development works as an engine of growth. The banking sector has experienced significant growth over the latest decade. Most of the authors highlight the importance of banking and financial sector development for the overall development of the economy (Naoaj, 2023). A well-developed financial and banking system efficiently transforms savings into investments by offering attractive incentives to households which induce them to reinvest their savings (Nagimova, 2023).

Pakistan is among those developing countries which have a less developed financial and banking system. The banking system of Pakistan is

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based on a dual structure of conventional and Islamic banking. The western conventional system of banking is based on interest, while the Islamic banking system is a *'Riba'* free system based on Islamic principles. The rate of growth of Islamic banking in Pakistan is significantly higher as compared to other nations in the region. The importance of Islamic banking can be judged through the fact that commercial banks operating globally also have separate windows for Islamic financial products. Citibank and Deutsche Bank were the first to offer Islamic banking services to Muslim as well as non-Muslin customers. Islamic banking is practically available in more than 100 countries. The work behind the introduction of Islamic banking started in 1960, while the Government of Pakistan officially announced Islamic banks beginning their operations in 2002, almost after a gap of 40 years (Zafar & Sulaiman, 2020). Keeping in view the performance and growth of Islamic banking, conventional banks have also started their separate Islamic branches and windows. In December 2015, the overall share of Islamic banking in the entire banking industry was 11.4% (Aziz et al., 2016). Zafar and Sulaiman (2020) examined growth in Pakistan's Islamic banking sector, its emergence, and future prospects. They found that Islamic banking can enhance the economy. Still, the Pakistani government remains uninterested in Islamic banking despite its potential.

Bank failure is often blamed on the lack of efficiency and growth. Accounting-based financial ratios measure a company's efficiency by calculating the amount of revenue a certain asset would generate. A precise and continuous monitoring of bank performance would assist the banking authorities to allocate resources, target audits, and comprehend bank operations. Bank failures have increased significantly since the global financial crisis of 2008, making the banking industry more difficult than others (Ng & Rusticus, 2012). Throughout this millennium, regulators and financial services scholars have remained interested in bank survivability because it affects both regulators and banks (Berger & Bouwman, 2013). The bulk of available literature compares conventional and Islamic banking based on several different measures of banking efficiency and performance (Jaffar & Manarvi, 2011; Moin, 2008; Mughal et al., 2015; Usman & Khan, 2012). Elyasiani et al. (1994) determined the association between production and financial performance of conventional and Islamic banking systems for Malaysia by performing a comparative analysis. Safiullah (2010) determined the same for Bangladesh. Siraj and Pillai (2012) used the dataset of the banking industry of the GCC region. Wasiuzzaman and

Gunasegavan (2013) used the Malaysian banking sector as sample to study the relationship between conventional and Islamic banking.

The existing literature on efficiency and growth in the banking sector is descriptive in nature and only compares bank structure and predicted efficiency (Hassan et al., 2009). The above study on performance factors doesn't explain how variables were used or whether there were any restrictions. The existing literature captures various important factors affecting the growth and performance of Islamic and conventional banking based on ratio analysis, comparative analysis, and non-econometric analysis, such as tabulation analysis. However, none of the existing literature discusses the growth of the dual banking industry in the framework of time series analysis.

The current study fills this gap in the existing literature by empirically estimating the growth of Islamic and conventional banking using the ARDL model (of cointegration analysis). It aims to find the factors that determine growth in the banking industry of Pakistan, comprising both conventional and Islamic banking sectors, through the ARDL methodology using time series data.

Table 1

Current Status of Islamic Banking in Pakistan

	FY-2021	FY-2022
Assets	3,633	4,389
Deposits	2,946	3,457
Number of Islamic Banking Institutions	22	22
Number of Branches*	3,274	3,504
Number of Islamic Banking Windows	1,394	1,595

Note. Source: Islamic Banking Bulletin (SBP, June-2022)

Table 1 shows the current status of Islamic banking in Pakistan. It is clearly evident from the table that total assets and deposits of the Islamic banking sector increased during the period 2020-2022. This fact confirms that the Islamic banking sector in Pakistan is growing year on year basis.

Table 2

Islamic Banking Branch Network

Rank	Islamic Banks	Number of Branches
1	Meezan Bank Limited	960

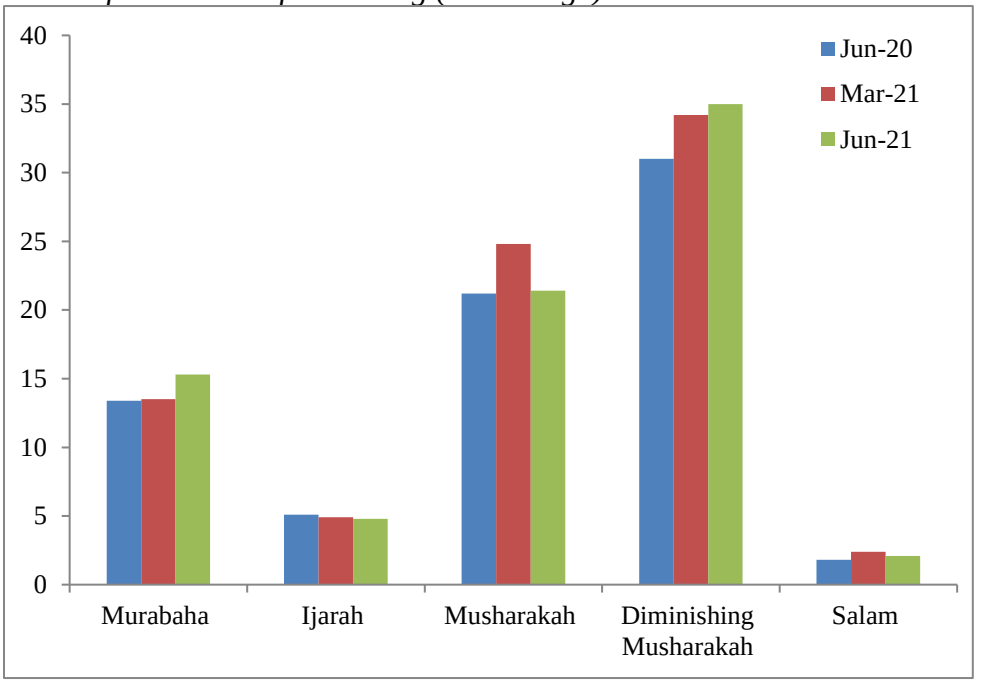
Rank	Islamic Banks	Number of Branches
2	Bank Islami Pakistan Limited	232
3	Dubai Islamic Bank Pakistan Limited	210
4	Al Baraka Bank (Pakistan) Limited	174
5	MCB Islamic Bank Limited	173

Note. Source: Islamic Banking Bulletin (SBP, June-2022)

According to the Islamic Banking Bulletin (SBP, June 2022), Meezan Bank is the leading Islamic bank in Pakistan with 960 branches. Bank Islami stands second, while the MCB Islamic Bank is the smallest of the five full fledge Islamic banks in Pakistan (in terms of the number of branches).

Figure 1

Status of the Modes of Financing (Percentage)



Note. Source: Islamic Banking Bulletin (SBP, June 2021)

Figure 1 shows the status of the different modes of financing in percentage. The five different modes are *Murabaha, Ijarah, Musharakah, Dimininshing Musharakah,* and *Salam*. Evidently, all the modes of financing show significant growth over time.

Literature Review

Financial Performance

According to Faizal and Sari (2023), a bank is a financial institution that aspires to provide customers with credit, whether by repayment or with money obtained from others, along with strategies for encircling new exchangers as credit department.

Sitorus (2019) states that aspects of a business's performance presentation directly related to its execution estimation are included in pay explanation. Net gain is usually used as a percentage of performance or as a justification for varied sizes. The ratio of a bank's financial performance is used to determine if the bank has adequate capital to provide resources that reduce or increase risk.

Islamic Banking Sector

Islamic financial features characterize a banking system or operation to adhere to Islamic regulations and standards. Islamic economic development should be supported by a sensible application of these features. Since Islamic law prohibits the collection of interest on cash loans, Islamic banks should not recognize or pay interest during their regular operations. Conventional banking, however, does not adapt to Islamic requirements. Cash loans are the primary source of premium in conventional banking. The relationship between the debtor and the bank determines whether the debtor keeps money in the bank or obtains it from the bank. Private groups lend premiums purchased from shops (Akbar et al., 2023).

Conventional Banking Sector

Conventional banks are interest-based "as well as being founded on non *Shariah* standards". Custom banks are banks that apply the premium technique. This is because the premium strategy existed previously, has become standard, and is generally compared with the benefit sharing strategy (Nugraha et al., 2023).

Islamic Finance Development Indicator (IFDI) report of 2022 estimated that the total assets of the Islamic finance sector reached approximately US$4.0 trillion in 2022, an increase of 17% from 2020. Additionally, from 2020 to 2022, the total global net income recorded by Islamic financial institutions tripled, indicating higher outcomes overall and particularly for Islamic banks. Islamic banking is so important that global commercial

banks have opened Islamic financial product windows. Citibank and Deutsche Bank were the first to provide Islamic banking to non-Muslim customers. Over 100 countries have implemented Islamic banking so far.

Islamic banks' customers evaluate *Shariah* compliance and profit-driven banking. Pakistani customers prefer Islamic banking over conventional banking (Hassan et al., 2009). Khan et al. (2012) compared the growth of conventional and Islamic banking in Pakistan. Islamic banking has developed much faster in Pakistan than in other countries. Its growth was determined using horizontal and trend analysis. SBP data from 2004 to 2009 covered investment, deposits, owners' equity, and assets. The study found that Islamic banking in Pakistan outperformed conventional banking. Islamic banks' deposits grew 5% faster than conventional banks. Aziz et al. (2016) reached the same conclusion using the SBP bulletins. The comparative analysis of conventional and Islamic banks was performed using ratio analysis. The findings revealed that return on equity, asset, interest, spread, and earnings per share are higher for Islamic banking. According to policy recommendations, the Pakistani government should develop Islamic banking due to its potential. Nabella et al. (2023) used secondary data of the Financial Services Authority (FSA) to investigate the effect of disbursed financing on Islamic banking assets.

Banna et al. (2022) examined the diversification and performance of Islamic banking systems during the COVID-19 pandemic from 2013Q4 to 2020Q4. *Shariah*-compliant finance and income diversification help Islamic banks. Income diversification protected Islamic banks from COVID-19 related economic shocks. Diversification requires *Sukuk* investment. Politicians, managers, and scholars should consider the importance of the growth of Islamic banking for the overall growth of the banking industry. Their study found a positive correlation of portfolio diversification with the growth of the firms.

Rizwan et al. (2022) measured the effect of systematic risk on the growth of Islamic banking due to volatility spillovers. They found that the Islamic banking system is highly sensitive to systematic risk as compared to the conventional banking sytem. Junaidi et al. (2022) used the Indonesian banking industry as sample to unfold the determinants of conventional and Islamic banking. They found the positive effect of religion on the growth of the Islamic banking sector along with other conventional factors. Berger and Bouwman (2013) examined the opinion of Muslim clients on the use of

Islamic banking services. They used the cross-sectional data of the profit and loss statements of 490 adult Islamic banking consumers. These statements were analyzed and it was observed that *Shariah*-compliant banking thrives in Bangladesh. It was also observed that ethical organization, Islamic principles, and reputation shape attitudes, not financial literacy.

Financial systems are crucial to both developed and developing countries. It was estimated that the Islamic and conventional banking sectors contribute between 40% and 50% of GDP growth in emerging nations (Adelakun, 2011). Economic expansion is facilitated by banks by providing loans at a lower interest rate to emerging industries. Increasing the amount of savings is also a way for banks to make money. Another study argued that total savings are essential for economic growth since they are the foundation for capital development (Akhtar et al., 2017).

According to Abduh et al. (2011), economic growth, interest rates, and inflation affect deposits made to Islamic and conventional banks in Pakistan. Furthermore, they added a dummy variable to assess the effects of the global financial crisis of 2008 on the growth of Islamic and conventional banks. The error correction model was applied using vector error correction and cointegration. It was found that deposit growth has a negligible effect on interest rates, profit rates, and GDP, whereas GDP has a major effect on deposits. However, the global financial crisis of 2008 made a positive impact on deposits (Akhtar et al., 2017).

Nawaz (2019) examined how developmental factors affect the growth of Islamic financial institutions. The author used the structural equation model to examine the growth drivers of banking assets and equity funds by including the most relevant factors. The factors included were gross domestic product, population, time, and risk. Islamic equities funds and banking assets must grow to create the Islamic financial system. The above study supported the concept that certain growth characteristics augment the development of Islamic banking. It emphasized the developmental factors of the Islamic financial system, including operational strategy and environment's impact on Islamic equities, funds, and banking assets.

Methodology and Data

The current study intended to find the factors that determine growth in the banking industry of Pakistan, comprising both conventional and Islamic

banking sectors, through the Autoregressive Distributive Lag (ARDL) methodology. It used the time series data for the period 2007-2022 for analysis. The data was extracted from different bulletins of SBP.

This study used the following functional form of the model to determine the growth of Islamic and conventional banking, respectively.

$$Investment\ Islamic\ Banking = f(Deposit\ Islamic\ Banking, Gross\ Domestic\ Product, Population)$$

ARDL model for Islamic banking,

$$IIB_t = \alpha_0 + \sum_{i=1}^{n} \beta_i (IIB)_{t-1} + \sum_{i=0}^{n} \delta_i\ (DIB)_{t-i} + \sum_{i=0}^{n} \gamma_i\ \ (GDP)_{t-i} + \sum_{i=0}^{n} \theta_i\ (POP)_{t-i} + e_i. \quad (1)$$

The standard Error Correction Model (ECM) for Islamic banking,

$$\Delta(IIB)_t = \theta_1 + \pi_0 ECM_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta(IIB)_{t-1} + \sum_{i=1}^{n} \beta_i \Delta(DIB)_{t-1} + \sum_{i=1}^{n} \varphi_i \Delta(GDP)_{t-1} + \sum_{i=0}^{n} \theta_i\ \Delta(POP)_{t-i} + \ \ e_{i.} \quad (2)$$

Functional form of the model for Islamic banking,

$$Investment\ Conventional\ Banking = f(Deposit\ Conventional\ Banking, Gross\ Domestic\ Product, Population)$$

ARDL model for conventional banking,

$$ICB_t = \alpha_0 + \sum_{i=1}^{n} \beta_i (ICB)_{t-1} + \sum_{i=0}^{n} \delta_i\ (DCB)_{t-i} + \sum_{i=0}^{n} \gamma_i\ \ (GDP)_{t-i} + \sum_{i=0}^{n} \theta_i\ (POP)_{t-i} + e_i. \quad (3)$$

The standard Error Correction Model (ECM) for conventional banking,

$$\Delta(ICB)_t = \theta_1 + \pi_0 ECM_{t-1} + \sum_{i=1}^{n} \alpha_i \Delta(ICB)_{t-1} + \sum_{i=1}^{n} \beta_i \Delta(DCB)_{t-1} + \sum_{i=1}^{n} \varphi_i \Delta(GDP)_{t-1} + \sum_{i=0}^{n} \theta_i \Delta(POP)_{t-i} + e_{i,} \quad (4)$$

where IIB is investment in Islamic banking, ICB is investment in conventional banking, DIB is deposit in Islamic banking, DCB is deposit in conventional banking, GDP is gross domestic product, and POP is population growth in both Islamic and conventional banking. The results of augmented Dicky-Fuller test confirmed mixed stationary level of the variables which suggests the use of ARDL model for empirical estimation.

Results and Discussion

The current study aimed to determine growth in the banking industry of Pakistan, comprising both conventional and Islamic banking sectors, through the ARDL methodology. Table 2 shows the results of correlation analysis.

Table 3

Correlation Analysis

Variables	Conventional Banking				Islamic Banking			
	INV	DEP	GDP	POP	INV	DEP	GDP	POP
INV	1	0.9834	0.9538	0.9837	1	0.4742	0.7880	0.8577
DEP	0.9834	1	0.9853	0.9985	0.4742	1	0.5091	0.5713
GDP	0.9538	0.9853	1	0.9861	0.7880	-0.5091	1	0.9861
POP	0.9837	0.9985	0.9861	1	0.8577	-0.5713	0.9861	1

Note. Source: Author's calculation using STATA

Correlation analysis indicates a positive relationship between the growth rate in deposits and the growth rate in investments, both in conventional and Islamic banking in Pakistan, over the period 2007-2022.

Table 4

Results of Augmented Dicky-Fuller Test

Variables	Conventional Banking			Islamic Banking		
	Tau Statistics	*p*-Value	Order of Integration	Tau Statistics	*p*-Value	Order of Integration
	First Difference of Variables					
Growth in Investment	-1.318952	0.5919	-	-1.623499	0.4470	-
Growth in Deposit (DEP)	-2.133423	0.2364	-	-2.103758	0.2457	-
Growth in GDP (GDP)	-0.653504	0.8278	-	-0.653504	0.8278	-
Growth in Population (POP)	-3.798261	0.0170	I(O)	-3.798261	0.0170	I(O)
	Second Difference of Variables					
Growth in Investment	-5.647614	0.0006	I(1)	-4.570288	0.0037	I(1)
Growth in Deposit (DEP)	-3.422935	0.0317	I(1)	-4.282387	0.0061	I(1)
Growth in GDP (GDP)	-4.176601	0.0082	I(1)	-4.176601	0.0082	I(1)
Growth in Population (POP)	-	-	-	-	-	-

Note. Source: Author's Calculation using STATA

Table 5

Results of ARDL (Long-run Analysis)

Variables	Conventional Banking			Islamic Banking		
	Coefficient	*t* Statistics	*p*-value	Coefficient	*t* Statistics	*p*-value
Growth in Deposit (DEP)	0.793549	0.657590	0.0523	0.287909	1.793672	0.0981
Growth in GDP (GDP)	3.150606	2.353762	0.0365	-10.89963	-4.028308	0.0017
Growth in Population (POP)	7.667050	1.307254	0.2156	20.73493	5.270102	0.0002
Constant (C)	-19.60472	-0.518423	0.6136	-22.91907	-3.298144	0.0064
Observations		16			16	
F-Statistics		180.1636			31.65663	
Prob-*F*		0.000000			0.000006	
R-Squared		0.978280			0.887819	

Note. Source: Author's calculation using STATA

Table 6

Results of ECM (Short-run Analysis)

Variables	Conventional Banking			Islamic Banking		
	Coefficient	*t* Statistics	*p* Value	Coefficient	*t* Statistics	*p* Value
Growth in Deposit (DEP)	0.696788	0.534074	0.0933	0.258838	2.076868	0.0378
Growth in GDP (GDP)	3.112489	1.447146	0.0315	-8.392388	-3.994750	0.0001
Growth in Population (POP)	8.006156	1.262626	0.0167	17.28164	5.657109	0.0000
Error Correction Term (ECT)	-0.79354	-0.65759	0.0523	-0.28790	-1.79367	0.0981

Note. Source: Author's Calculation using STATA

Table 4 shows the results of unit root test. It indicates that the variables of 'growth in investment' and 'growth in GDP' are not stationary at first difference, both in conventional banking and Islamic banking, while the variable of 'growth of population' is stationary at first difference. So, the second difference of the variables of 'growth in investment' and 'growth in GDP' was selected to make them stationary. The order of integration of the variable 'growth in investment' is I (0), while the order of integration of the variable 'growth in deposit', 'growth in GDP' and 'growth in population' is I (1), both in Islamic and conventional banking sectors. The results of unit root analysis are mixed and provide the rationale for using the ARDL model for long-run association and short-run deviation.

Table 5 shows the results of Autoregressive Distributive Lag (ARDL) model. It indicates that the variable 'growth in deposit' has a positive and significant impact on the performance of both conventional and Islamic banking in Pakistan. In the current empirical work, an increase in deposit was found to be an important indicator of an increase in growth in the banking industry. If the rate of deposit in the banking industry increases, it also increases the efficiency and growth of conventional as well as Islamic banking. These results are in line with the findings of Zafar and Sulaiman (2020). The results indicate that an increase in GDP has a positive effect on the growth of conventional banking but it has a negative effect on the growth of Islamic banking in Pakistan. The results also indicate that an increase in population has a positive effect on the growth of both conventional and Islamic banking sectors in Pakistan.

Table 6 shows the results of the short-run error correction model. It indicates that the variable 'growth in deposit' has a positive and significant impact on the performance of both conventional and Islamic banking sectors in Pakistan. Furthermore, deposits affect the efficiency of Islamic finance. The results are in line with the findings of Nawaz (2019) who examined the determinants of the growth of Islamic banking and finance in Pakistan. The results indicate that an increase in GDP has a positive effect on the growth of conventional banking but it has a negative effect on the growth of Islamic banking in Pakistan. The results also indicate that an increase in population has a positive effect on the growth of both conventional and Islamic banking sectors in Pakistan. The coefficient of the error correction term is significant in each model and indicates the convergence towards the long-run model. In conventional banking, the

coefficient of error correction term indicates 79% correction every year, while in Islamic banking the coefficient of error correction term indicates 28% correction every year.

Conclusion and Policy Recommendations

The current study concludes that deposits, GDP, and population growth are significant factors that determine the long-run growth of the banking industry in Pakistan. From the policy perspective, it is suggested that measures must be taken to increase deposits in both systems of banking by giving various incentives to households.

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