Conventional and Islamic Banks' Performance An Analysis of During and Post-Economic Crisis

Mehboob Ul Hassan* Muhammad Meraj** Altaf Hussain Solangi***

Abstract

The current study looks at the factors that affected conventional and Islamic banks' profitability between 2007 and 2013. This period is further classified into two periods, i.e.2007-2009 and 2010-2013, the tenure during and the tenure after the financial crisis. Descriptive research design and logical reasoning are employed in this study to analyze fourteen conventional and Five Islamic banks. We used Return on Assets to measure the profitability, whereas two macro-economic variables, i.e. Inflation and GDP (gross domestic product), and three industry-specific constructs, i.e. Size, Leverage and Liquidity as independent constructs. According to panel regression results, the profitability of both banking sectors during both tenures was unaffected by macroeconomic factors. In the case of financial or variables that are specific to an industry, both types of banking sectors had a negative impact on profitability under pre-economic crisis tenure. However, the profitability of traditional banks is considerably enhanced by liquidity. The scale of both banking sectors greatly boosts profitability while the financial crisis is ongoing. Conventional banks' leverage had a significant negative and liquidity had a significant positive impact on profitability during the financial crunch. In the years following the crisis, once again Islamic banks increased in profitability despite being inefficient, providing them with a tax shelter, with an increase in leverage significantly. On the other hand, conventional banks had the inverse impact of leverage on their profitability but they managed their liquidity much better than the previous two tenures and generated more profit. The outcomes will be useful for the banking institutions to develop their strategies consequently.

Keywords: Islamic; conventional banks; determinants of profitability; regression analysis.

JEL Classification: B26, B55

*Professor, Islamic Banking Center, Department of Economics, King Saud University, Riyadh, Saudi Arabia. Email: mehassan@ksu.edu.sa

**Associate Dean, Faculty of Social and Basic Sciences & Head, Department of Economics, Mohammad Ali Jinnah University Karachi, Pakistan. Email: m.meraj@jinnah.edu

***MSEF Scholar, Economics Mohammad Ali Jinnah University, Karachi, Pakistan.
Email: sp22msef0005@maju.edu.pk

1. Introduction

In each country's economic development, the financial system is always a key component to be taken into consideration. Because the operations of the financial system help to boost the efficiency of economic activities, if the financial system is not robust, the economy will never expand and may even experience a severe reduction. It promotes confidence among investors, borrowers, and creditors on both a national and international scale, as well as among individuals. If the financial system or a certain industry is stable, the investment will definitely expand, which will result in increases in employment, per capita income, and the Gross Domestic Product. In order to stabilize their financial systems and expand their economies, the governments of all countries are preoccupied with developing policies that will aid in the stabilization and expansion of their respective economies first and foremost. In the financial industry, there are institutions like banks, Modaraba firms, leasing companies, and insurance companies, to name a few examples (Hassan et al., 2018).

For most of us, banks are a necessary part of our daily lives, and it is impossible to imagine a period when we did not have access to banking services (Khan et al., 2018). To put it another way, banks are supposed to be the lifeblood of a country's economic system. The use of "Monetary Tools," which are made available through the financial system, by the government of any country can help to improve the economy of that country. Additionally, financial institutions that are under government regulation handle all of the business and financial activities in which we are involved. Although conventional banking provides several advantages, it has also been associated with several negative aspects, as we have already mentioned, the conventional banking system was primarily responsible for the financial and economic catastrophe that occurred in the twenty-first century.

Due to the advent of Capitalism, in which interest rates are permitted, the frequency of such financial crises has increased significantly. If any person is not able to make a gain on a debt, it will have an impact on the entire financial system. We have seen that financial institutions, such as commercial banks, are the principal victims of the current economic crisis, which we attribute to the possibility of the economic system collapsing. Financial institutions that provide traditional ways of financing and investment are known as commercial banks. It is for this reason that academics, business leaders, and policymakers were eager to put policies in place that would prevent the country from going bankrupt. Among the methods that will help to eliminate "interest" and the ramifications of non-payment of interest are Islamic banking models. Every one of the instruments employed by Islamic banks conforms to the Shariah method of investing, which is free of interest.

Islamic finance has been in operation in Pakistan for thirty years, but the State Bank of Pakistan (SBP) only began to make serious efforts in January 2000, when it established the Central Trust Fund of Pakistan (CTFS), and again on September 15, 20 years ago, when it

established an Islamic banking section at its headquarters in Islamabad, according to the State Bank of Pakistan website. It was created by the SBP to advance Islamic banking and investment methods. When Meezan Bank Limited was granted a license to operate as Pakistan's first Islamic bank, it did so after receiving certification from the State Bank of Pakistan that it was capable of performing the functions of a fully-fledged Islamic bank.

It is widely acknowledged that the global financial crisis has had a considerable influence on the majority of countries' economies, notably in the banking sector (Asadullah et al., 2021). A component of the financial sector, in particular, the banking sector, is accountable for an economy's immune and repair systems. The effective operation of this business may provide a source of energy for the development of other industries as well as the expansion of the economy. According to research by Sadaqat et al. (2011), Pakistan's financial market is one of the most unstable in the world. Consequently, it is anticipated that the banking sector should be financially sound and powerful, as well as operating at a profit. To effectively address the issue, it is vital to have a complete understanding of the factors that influence financial performance in the industry before, during, and after an economic downturn.

1.1 Significance of the study

The significance of studying the performance of Islamic and conventional banks during and after an economic crisis lies in understanding the dynamics and resilience of different banking systems in challenging times (Le , 2022). Economic crises often lead to systemic risks that can jeopardize the stability of the entire banking sector. By studying Islamic and conventional banks, policymakers and regulators can assess the extent to which each system contributes to systemic risks and identify measures to enhance financial stability. Islamic banking operates based on the principles of risk-sharing and asset-backed financing, which can affect the banks' performance during a crisis. Understanding how Islamic banks fare during economic downturns helps in evaluating the resilience of their risk-sharing mechanisms and assessing their potential as an alternative to conventional banking (Wahyuni & Aidah ,2022).

Islamic finance adheres to ethical principles, such as avoiding interest-based transactions (riba) and investing in socially responsible activities. Investigating the performance of Islamic banks during and after an economic crisis allows for a study of how ethical considerations impact their decision-making, risk management, and contribution to the broader economy. The findings from studying Islamic and conventional banks' performance during and after an economic crisis can inform policymakers in formulating appropriate regulatory frameworks and policies (El-Chaarani et al., 2022). It can shed light on the need for tailored regulatory measures specific to each banking system, promoting financial stability and sustainable growth.

Moreover, a crisis can significantly impact investor confidence and market perception of different banking systems. Analyzing the performance of Islamic and conventional banks helps to understand how investors react to each system during turbulent times. This insight can influence market participants' decisions and potentially shape the future development of the banking industry (Mirzaei, 2022). Islamic banking has experienced substantial growth and global expansion over the past few decades. Studying the performance of Islamic banks during and after an economic crisis has broader implications for countries with significant Islamic finance sectors, as well as for those considering the adoption of Islamic banking principles. It can provide valuable lessons for policymakers worldwide. Overall, examining the performance of Islamic and conventional banks during economic crises allows for a comprehensive evaluation of their strengths, weaknesses, and overall contribution to financial stability. It provides policymakers, regulators, and market participants with valuable insights to enhance risk management, strengthen resilience, and shape future banking practices.

2. Literature Review

Whether directly or indirectly, the financial catastrophe had a physical and intangible effect on the insurance business all over the world, both directly and intangibly. The incident has been confirmed by several well-known specialists and industry analysts. As Sebastian Schich (2009) points out, "the financial crisis has nevertheless had an increasingly visible impact on the insurance industry as the crisis has progressed and the prognosis for real activity has deteriorated considerably." According to representatives from the banking industry, a financial crisis appears to be primarily a banking tragedy, and the sector's long-term viability does not appear to be jeopardized as a result of the crisis. According to Gul et al. (2011), the only factor that positively and insignificantly correlates with the firm size is ROA. As reported by Pasiouras and Kosmidou (2007), the size of a bank and its profitability have a positive relationship. Based on his research, Bashir (2003) discovered that the size of an institution hurts its profitability. According to Wasiuzzaman and Tarmizi (2010), there is no statistically significant correlation between bank profitability and size.

(Le, 2022) used a sample of 24 nations from the fourth quarters of 2013 and 2020 to examine the relationship between diversification and the performance of Islamic banking systems under the influence of the COVID-19 upheaval. His results show that sectoral diversification of financing that complies with Shari'ah and income diversification are both favorably correlated with the success of Islamic banking systems. Income diversification is observed to lessen the detrimental impact of this health issue on the functioning of the Islamic banking systems, even if this analysis reveals a negative impact of the COVID-19 shock. It was discovered by Scott and Arias (2011) that the profitability of banks is positively correlated with the gross domestic product (GDP). It was discovered by Sufian and Habibullah (2009) that the GDP has a mixed impact on return on assets (ROA). We noticed that the GDP coefficient was negative during times of crisis, but when we are in charge of both crises

and peaceful periods, the GDP coefficient changes to a more favorable value. (Le, 2022) (Mirzaei,2022) Concluded that the size of the company, the board of directors, the sharia supervisory board, and third-party funds are all factors that affect financial success. This result shows that the research model fits the data effectively. Results of the individual sample test (t-test) indicate that firm size and the size of the board of directors have a negative impact on financial performance, whereas the size of the sharia supervisory board has no effect on financial performance.

Return on assets and return on equity were found to be negatively related by Khrawish (2011), who revealed that GDP and inflation had a negative relationship with each other (Mirzaei ,2022). According to Bourke (1989), Eichengreen and Gibson (2001), and Bashir (2000), one of the major elements impacting bank profitability is liquidity. We may expect higher profits if we invest less of our cash in liquid investments, according to Eichengreen and Gibson (2001). The individuals listed as Scott (2014), according to their empirical analysis, Nigeria's inflation and bank size had a negligible effect on bank profitability over the study period (Wahyuni & Aidah, 2022). (Alabbad, 2022) concluded that the two types of banks react to income support programmers differently. When governments implement income support initiatives, Islamic banks' finance income and net income shift much more than those of their favorably conventional peers. Additionally, the stock values of Islamic banks react favorably to income support initiatives more than those of regular banks.

H0: Macroeconomic and bank-specific indicators haven't had any impact on Conventional and Islamic Banks' profitability both during and after the economic crisis.

3. Methodology

According to the authors, descriptive research design and logical reasoning are employed in this study. Panel data covering a period of six years, from 2007 to 2013, has been collected and analyzed to determine the impact of industry-specific and macroeconomic variables on the profitability of both pillars of the banking sector. The authors have selected fourteen conventional and Five Islamic banks and used Return on Assets to measure the profitability, whereas two macro-economic variables, i.e. Inflation and GDP (gross domestic product), and three industry-specific constructs, i.e. Size, Leverage and Liquidity as independent constructs have been used. There are three years labeled as post-crisis years, ranging from 2010 to 2013, and a period defined as the global financial crisis period, spanning from 2007 to 2009. In his research, the author has made use of descriptive statistics as well as Panel Regression approaches, among other techniques. The author has selected nineteen financial institutions, five of which are Islamic and fourteen of which are conventional. The equations which have been developed for all models are as below. In this model, we have shown the impact of macroeconomic financial values like GDP and Inflation on the performance of Islamic and conventional banks. The performance is analyzed through the return on assets,

which translates the financial performance. Moreover, the impact of the liquidity of that bank as well as the size is also considered to analyze the performance of categories of these banks.

3.1 Model: Macroeconomic and Financial values' effects on Islamic and conventional banks' viability

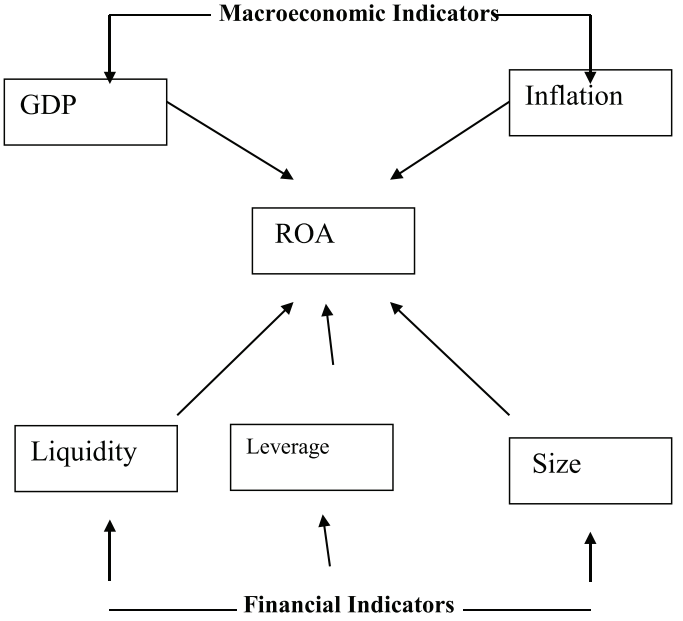

Figure 1: Financial Indicators

Equation –ROA = Bo + B1GDP + B2INF + B3L + B4LQ + B5SZ + σ

Where, ROA = Return On Asset (Conventional and Islamic Banks)

GDP: Gross Domestic Product

INF : Inflation

L: Leverage (Conventional and Islamic Banks)

SZ: Size of the firm (Conventional and Islamic Banks)

4. Empirical Results & Discussion

4.1 Regression Results (During Economic Crisis Tenure):

Table 1
Panel Regression Results (During Economic Crisis Tenure)

Constructs	(Fixed Impact Model) Conventional Banks	(Fixed Impact Model) Islamic Banks
Constant	0.519	0.023
	(0.000)	(0.001)
Gross Domestic Product	-0.313	0.612
	(0.930)	(0.409)
Inflation	-0.720	-0.813
	(0.517)	(0.237)
Size	0.229***	0.206***
	(0.000)	(0.0006)
Leverage	-3.011***	0.61
	(0.000)	(0.361)
Liquidity	0.922***	0.90
	(0.003)	(0.25)
F-Statistic (P-Value)	26.18	34.978
	(0.0000)	(0.0008)
R-Squared	0.373	0.318
Hausman Test	Prob>chi2 = 0.0007	Prob>chi2 = 0.0000

The table 1 shows the results of panel regression of both banking sectors throughout during the economic crisis. In both models, the fixed-effect model was selected as the more appropriate model than Random Effect Model (REM) and it was endorsed by significant values of the Hausman Test. In conventional banks, leverage was found to have a significant negative association with conventional banks' profitability, whereas size had a meaningful helpful impact on it. 1 per cent growth in size and leverage will lead to a growth of 0.22 per cent of size and 3.01 per cent of leverage respectively. However, liquidity and traditional banks' profitability were highly positively correlated. 1 per cent increase in liquidity will tend to increase 0.9 per cent of the profitability of insurance companies. Other variables were having insignificant relationships throughout the tenure. The R-Squared i.e. 0.373 indicates that 37.3% of variation has been discussed by this model. Moreover, the F-Value i.e. 26.18, and F-P value i.e. 0.000 revealed that the model is fit to analyze the data.

The only factor that significantly influenced profitability in Islamic banks was size. A 1 per cent increase in size will lead to an increase of 0.206 per cent of the profitability of the Islamic banks. However, other variables have an insignificant relationship with profitability. The R-Squared i.e. 0.318 indicates that 31.8% of variation has been discussed by this model. Moreover, the F-Value i.e. 34.97, and the F-P value i.e. 0.0008 revealed that the model is fit to analyze the data.

4.2 Diagnostic Tests (During Economic Crisis Tenure)

Table 2
Diagnostic Tests

Tests	(Fixed Impact Model) Life Insurance Companies	(Fixed Effect Model) Non-Life Insurance Companies
Breusch-Pagan LM independence test	0.591	0.81
Group Wise Heteroscedasticity Wald Test	0.631	0.514
Autocorrelation in panel data - Wooldridge test	0.4996	0.725

The table 2 summarizes the diagnostic tests that were carried out to verify the findings and uphold the panel regression method's presumptions. In both fixed-effect styles, the Breusch-Pagan LM analysis of individuality value leads to insignificant i.e. 0.591 and 0.81 which is evident that in both models there is no issue of independence. Group-wise heteroscedasticity - Wald Tests were also insignificant i.e. 0.631 and 0.514 which proved that all data sets have no problem of heteroscedasticity. Wooldridge's check for autocorrelation in panel number values i.e. 0.4996 and 0.7225 for conventional and Islamic banks indicates that there is not an issue of autocorrelation among data sets of both models.

4.3 Panel Regression Results -Post Economic Crisis Tenure (2010-2013)

Table 3
Panel Regression Results (Post Economic Crisis Tenure)

Constructs	(Fixed Effect Model) Conventional Banks	(Random Effect Model) Islamic Banks
Constant	0.473	0.572
	(0.004)	(0.000)
Gross Domestic Product	0.766	0.632
	(0.323)	(0.229)
Inflation	0.212	-0.900
	(0.111)	(0.717)
Size	-0.662	-0.474***
	(0.990)	(0.000)
Leverage	-1.400***	0.961***
	(0.003)	(0.000)
Liquidity	2.433***	0.777
	(0.000)	(0.428)
F-Statistic (P-Value)	12.21	8.161
	(0.0000)	(0.0000)
R-Squared	0.293	0.288
Hausman Test	Prob>chi2 = 0.0007	Prob>chi2 = 0.2124
Breusch-Pagan(LM) Testing for Random Serial Correlation:	-	Prob>chibar2 = 0.0000

Table 3 shows the results of panel regression of data taken post-economic crisis. The author has taken post-economic crisis data from 2010 to2013. The Hausman Test's substantial value in the conventional banking model demonstrated that the fixed effect model is preferable over the random effect model. The author found that leverage had a significantly negative relationship with the profitability of the conventional banks in Pakistan. One per cent increase in leverage tends to decrease 1.4 per cent of profitability of Life Insurance companies. Profitability is considerably boosted by liquidity. The profitability of Pakistan's traditional banks will drop by 2.433 per cent for every per cent rise in liquidity. However, other variables remain insignificant. The R-Squared value i.e. 0.293 shows that a 29.3% variation of profitability has been described by the prescribed variables. The F-Value i.e. 12.21 and the F-P value i.e. 0.000 revealed that the model is fit to analyze the data.

In Islamic banks, the insignificant value of the Hausman Test leads to running Breusch-Pagan (LM) assessment for random Serial Correlation. The random effect model is preferred over the ordinary least squares model, according to the LM test's significant value. Panel regression results showed that size has a significantly negative impact on the profitability of Islamic banks. The profitability of Islamic banks typically declines by 0.47 per cent for every one per cent rise in the size. The profitability of Islamic banks in Pakistan will rise by 0.96 per cent for every percentage point increase in leverage. Moreover, other variables were

found to be insignificant. The R-squared value i.e. 0.288 indicates that 28.8% of the variation of the dependent and independent variables has been described by the given model. Rests of the variations are because of unknown variables. The F- value i.e. 8.161 and the F- P-value i.e. 0.0000 signified that the model is fit to run.

4.4 Diagnostic Tests (Post Economic Crisis Tenure)

Table 4
Diagnostic Assessments

Assessments	(Fixed Effect Model) Conventional Banks	(Random Effect Model) Islamic Banks
Independence Breusch-Pagan LM	0.2323	0.6959
Group Wise Heteroscedasticity - Wald Test	0.317	Robust Command Error
Autocorrelation in panel data - Wooldridge test	0.555	0.1247

The overview of the diagnostic assessments that were performed to confirm the findings and uphold the panel regression technique's presumptions is presented in Table 4. The p-values of the Breusch-Pagan LM test of independence i.e. 0.2323 and 0.6959 of conventional and Islamic banks revealed that there is no issue of independence among the panel data. In both the models, the Wooldridge test for autocorrelation yielded non-significant results, indicating the absence of autocorrelation in the panel data. The Wald Test returned an insignificant value i.e. 0.317 for heteroscedasticity. It means the problem of heteroscedasticity is not the issue in the given data whereas in the second model, where the random effect model was selected, the test for heteroscedasticity is not available in STATA. In order to resolve the problem of heteroscedasticity from the supplied data, the researcher has therefore used the Robust error command.

5. Conclusion

This study aims to investigate or evaluate the factors that influence conventional and Islamic banks' profitability before, during, and after financial crises. The lack of research on this subject inspired our study. The author has taken Return on Assets to measure the profitability, whereas two macroeconomic variables, i.e. Inflation and GDP (gross domestic product), and three industry-specific constructs, i.e. Size, Leverage, and Liquidity were treated as independent variables. According to the panel regression findings, macroeconomic factors have little bearing on the profitability of interest-based and Islamic banks. The reason for the insignificant effect is the developing economic system of Pakistan. Both sorts of banking

sectors have a negative impact on profitability when it comes to financial or sector-specific variables because they are ineffective at turning a profit off of their assets. However, the liquidity management of conventional banks was better than Islamic banks which faced an inverse impact on profitability which is inconsistent with the findings of Khokhar et al. (2020).

Conventional and Islamic banks, two subsectors of the insurance industry, were both productive and made more money thanks to the growth of their assets throughout the financial crisis. Although conventional banks experienced a fall in profitability along with a rise in borrowing, they managed their liquidity better throughout the financial crises. During a post-crises period, once again Islamic banks were inefficient, nevertheless, they had tax protection through an increase in profitability with an increase in leverage. On the other hand, conventional banks had an inverse impact of leverage on their profitability but, they managed their liquidity much better than the previous two tenures and generated more profit.

Examining the performance of Islamic and conventional banks side by side during an economic crisis allows for a comparative analysis of their strengths, weaknesses, and overall stability. This analysis can provide insights into the effectiveness of each system in responding to financial shocks and mitigating risk. The author concludes that both banking sectors should concentrate on their internal, sector-specific, or financial metrics as suggested by Mehboob-Ul-Hasan et al. (2020) for the GCC financial institutions. They need to create and put into place the kinds of policies that will allow them to boost their profits through efficient liquidity management, benefit from leverage, make use of tax shelters or tax evasion, and cut expenses by building up their assets, which is the idea behind economies of scales. The banking sector should manipulate its policies which enable the sector to build more strength and stabilize because if the banking sector is stable then the economy of any country will be in shield protection. It will create trust among investors, traders, businessmen, and other important personnel.

References

Alabbad, A., & Schertler, A. 2022. “COVID-19 and bank performance in dual-banking countries: an empirical analysis.” *Journal of Business Economics 92*(9), 1511-1557.

Asadullah, M., Hassan, M., & Siddiqui, Z. A. (2021). Comparison of Takaful and Non-Takaful Insurance Companies of Pakistan: Under Pre, During, and Post Economic Crisis 2008. *Etikonomi, 20*(1), 201 - 212.

Bashir, A.H., (2003). Determinants of Profitability in Islamic Banks: Some Evidence from the Middle East. *Islamic Economic Studies, 11*(1), 31-57.

Bashir, A. (2000). Determinants of Profitability and Rates of Return Margins in Islami Banks: Some Evidence from the Middle East, Grambling State University, Mimeo.

Bourke, P., (1989), " Concentration and other Determinants of Bank Profitability in Europe". *Journal of Banking and Finance, 13*(4), 65-80.

Eichengreen, B. & H.D. Gibson (2001). "Greek banking at the dawn of the new millennium." *CERP Discussion Paper 2791*, London.

El-Chaarani, H., Ismail, T. H., El-Abiad, Z., & El-Deeb, M. S. 2022. " The impact of COVID-19 on financial structure and performance of Islamic banks: a comparative study with conventional banks in the GCC countries." *Journal of Economic and Administrative*.

Gul, S., Irshad, F., Zaman, K. (2011), " Factors Affecting Bank Profitability in Pakistan" , *The Romanian Economic Journal, 14*(39), 61- 83.

Hassan, M., Khan, M. N., Amin, M. F. B., &; Khokhar, I. (2018). Measuring the Performance of Islamic Banks in Saudi Arabia International. *Journal of Economics and Management, 12*(1), 99-115.

Khokhar, I., Hassan, M., Khan, M. N., Amin, M. F. B., & Center, I. B. (2020). Investigating the efficiency of GCC banking sector: An empirical comparison of Islamic and conventional banks. *International Journal of Financial Research, 11*(1), 220-235.

Khrawish, H. A. (2011). Determinants of commercial banks performance: evidence from Jordan. *International Research Journal of Finance and Economics, 12*(81), 148-159.

Le, T. D., Ho, T. H., Nguyen, D. T., & Ngo, T. 2022. "A cross-country analysis on diversification, Sukuk investment, and the performance of Islamic banking systems under the COVID-19 pandemic." *Heliyon 8*(3), e09106.

Mirzaei, A., Saad, M., & Emrouznejad, A. 2022. "Bank stock performance during the COVID-19 crisis: does efficiency explain why Islamic banks fared relatively better?" *Annals of Operations Research* 1-39.

Mehboob-ul Hassan, Md. Fouad bin Amin, I. Khokhar, N. Khan, (2020) "Examining the ComparativeEfficiency of GCC Islamic Banking", *International Journal of Islamic Banking, 37*(4),9-32.

Khan N. Md. F. Bin Amin, I. Khokhar, Mehboob-ul Hassan, Akhlaque A., (2018) "Efficiency Measurement of Saudi Banking Industry: An Empirical Comparative Analysis", Al-Shajarah: *Journal of the International Institute of Islamic Thought and Civilization (ISTAC)*, 111-134.

Pasiouras, F.,& Kosmidou, K. 2007. Factors influencing the profitability of domestic and foreign commercial banks in the European Union. Research In International Business & *Finance, 21*(2), 222-237.

Sadaqat, M. S., Akhtar, M. F., & Ali, K. (2011). An Analysis on the Performance of IPO – A Study on the Karachi Stock Exchange of Pakistan.*International Journal of Business and Social Science, 2*(6), 275-285.

Scott, J. (2014). A matter of record: Documentary sources in social research. John Wiley & Sons.

Scott, J. W., & Arias, J. C. (2011). Banking profitability determinants. *Business Intelligence Journal, 4*(2), 209-230.

Sebastian Schich (2009), Insurance Companies and Financial Crisis, *Financial Market Trends* ISSN 1995-2864.

Sufian, F. & M. Habibullah, 2009. Bank Specific and Macroeconomic Determinants of Bank Profitability: Empirical Evidence from the China Banking Sector. *Frontiers of Economics in China, 4*(2), 274-291.

Wasiuzzaman, S., & H. Ahmed Tarmizi, 2010. Profitability of Islamic Banks in Malaysia: An Empirical Analysis. *Journal of Islamic Economics, Banking, and Finance, 6*(4),51-68.

Wahyuni, S., & Aidah, R. N. 2022. "Measuring Financial Performance Islamic Banking During the Covid-19 Pandemic and its Determinant Factors. ." *IOSR Journal of Economics and Finance (IOSR-JEF) 13*(2), 10-17.