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The Impact of Pre and Post-Mergers and Acquisitions on the Financial Performance of Selected Banks in Pakistan

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ABSTRACT

The purpose of this study is to investigate the financial performance of merging banks in Pakistan in a pre and post-scenario to identify the impact of key indicators on the performance of acquirer company. For this purpose, data for 4 banking companies have been taken from financial year 2005 to 2022. Banking companies include Meezan Bank Limited (MBL) Muslim Commercial Bank Limited (MCB) Al Baraka Bank (Pakistan) Limited (ABPL) and Bank Islami Pakistan Limited (BIPL). Paired sample t-tests and regression analysis was used to identify significant differences and impact on pre and post-merger. Results revealed that there were significant positive differences in specific financial indicators as Return on Assets on MCB only. However, results indicated in pair sample t-test that Net Interest Margin was significant for MCB and ABPL, whereas Debt to Equity was significant for all banks. Further Capital Adequacy Ratio revealed significant results for MBL and ABPL but Total Loan to Total Deposit has significant outcome for BIPL only. It is important that results for Non-Performing Loans to Total Loans were significant for MBL, MCB and BIPL but Earning per Share has been found significant for MBL. The key important indicators of Market Price per Share is found significant for all banks. Dividend per share has significant outcome for ABPL only. Regression results revealed that in post-merger capital adequacy ratio, earning per share has positive but dividend per share and market price per share has significance negative impact on return on assets at ($p<0.05$) but no significant impact was found pre-merger context. The findings provide valuable insights for policymakers to strategically focus on future corporate restructuring and to ensure financial stability.

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1. Introduction

The term "merger and acquisition" describes the combination of two or more businesses so that only one remains a separate legal entity. When a firm, business organization or its operating units transfer or combine with another company, business organization or both, this is referred to as a merger or acquisition. To achieve business growth and survival, mergers and acquisitions are phrases used in global business. A merger occurs when two or more companies combine to establish one huge company with identical goals, whereas an acquisition occurs when a major company buys out or acquires a smaller company (Joshua, 2011). In Pakistan, mergers and acquisitions are now the most recent events, and this activity is currently stagnant. Pakistan's number of mergers is significantly lower than developed countries worldwide. Mergers in Pakistan originated during the culmination of the fifth wave of mergers. Across the globe, the banking sector dominates the bulk of mergers in the financial industry. The main objective behind these business alliances in the banking sector was to get the advantages of economies of scale. Banks can attain major expansion in their operations by implementing company mergers in the banking sector and notably reduce their expenditures. Bank mergers result in a reduction of competition by decreasing the number of competitors in the banking industry. The frequency of M&A in the Pakistani business sector escalated in reaction to several financial modifications and legal requirements enforced by the Pakistani government in 1995. These policies aimed to encourage the process of liberalization and globalization.

It is important in developing economies like Pakistan, where financial institutions serve as vital facilitators of economic growth. As the central bank of a developing country, the State Bank of Pakistan (SBP) has performed two vital functions for the financial industry. To preserve their financial stability, prudential regulation, in the first place, guarantees the dependability of banks and the development of financial organizations. Second, it works towards a goal that looks forward by encouraging the expansion of financial markets and improving credit availability. In 2002, the State Bank of Pakistan liberalization spurred banking mergers. Due to SBP liberal reforms, the Pakistani banking industry has changed significantly. Pakistani M&A is driven by regulatory capital requirements, legal changes, and profit. The SBP periodically sets minimum paid-up capital requirements for Pakistani domestic and foreign banks. Following the SBP decision to boost minimum paid-up capital requirements, mandate more branches, and maintain a capital adequacy ratio, banks struggled to achieve these conditions. Therefore, banks merged with similar-sized banks, while larger banks purchased smaller banks that matched the criteria (Anwar, 2011).

This study contributes to the existing corpus of literature about the effects of merger and acquisition (M&A) activity on the financial performance of the banking sector in developing economies. This study makes an essential contribution to decision making for State Bank of Pakistan and other governmental regulatory authorities regarding corporate restructuring for more liberalization and financial stability. The analysis of pre and post M&A financial performance, utilizing key ratios such as P/E ratio, EPS, and Market price per share provides valuable insights into the efficacy of consolidation strategies in the Pakistani banking sector. By examining these metrics pre and post-mergers and acquisitions activities, this study can assess the impact on profitability, market valuation, and investor sentiment, offering a comprehensive understanding of the outcomes of such strategic moves within the context of Pakistan's banking industry. This study contributes to the broader discourse on mergers and acquisitions strategies in emerging markets and offers actionable insights for stakeholders navigating consolidation efforts in the Pakistani banking landscape. To guarantee that the nation's banking industry keeps expanding and has a favorable impact on its economy and society, this research will be essential.

The study is important because the pre and post-merger and acquisition financial performance analysis using key ratios such as Price-earnings ratio, earnings per share, and Market price per share is paramount in assessing the impact on selected banks in Pakistan. These ratios offer insights into the valuation, profitability, and investor sentiment surrounding the merger or acquisition, helping stakeholders gauge the effectiveness of the strategic move. By examining these metrics pre and post-merger and acquisition activity, decision-makers can understand its influence on the banks' competitiveness, market positioning, and overall financial health, thereby guiding future strategic decisions in the dynamic banking sector of Pakistan.

Hence this study covers those unaddressed issues in Merger and Acquisition transactions that elaborate the impact on pre and post-merger financial performance of commercial banks which has not been entertained by past literature with respect to the banking sector of Pakistan.

The major purpose of this study is to examine the financial performance of banks in a pre and post-merger and acquisition process in Pakistan, moreover to determine the key determinants of merger and acquisition transactions in the financial sector of Pakistan and to provide policy guidelines for commercial banks for better corporate restructuring and financial stability and governance as a result of merger transactions.

2. Review of Literature

The research examines the effects of mergers on various firm performance indicators, including profitability, liquidity, leverage, and shareholder wealth. The current theories of merger and acquisition support the idea that synergistic benefits are obtained over the long term as opposed to the short term. The synergistic benefits of mergers and acquisitions are reflected in profitability ratios like ROA and ROE (Barney, 1991).

This notion often points to resource similarities in the acquiring and target businesses. However, when the acquiring and target companies have significant resource differences, this argument suggests a particularly advantageous partnership. These contradictory assumptions showed that differences affected the amalgamated firm's performance. This suggests that classifying mergers as related or unrelated may not be as beneficial as previously thought. Merger and acquisition research may explain company success better by emphasizing specific resources rather than tactics (Harrison, Hitt, Hoskisson, & Ireland, 1991).

According to financial theories, M&A can have both good and negative consequences on the performance of business firms. Successful merger and acquisition deals, under the philosophy behind them, enhance the profitability of the M&A firms. This improvement in monopoly or effectiveness may cause this rise in profitability (Beena, 2000; Rashid & Naeem, 2017).

Sengar, Badhotiya, Dobriyal, and Singh (2021)highlighted M&A's crucial significance in Pakistani company growth and expansion. Mergers and acquisitions helped companies grow and expand their customers. This study provides an appropriate merger and acquisition model that analyzes banks' post-merger performance. Future Indian bank mergers and acquisitions can be analyzed using the model. SWOT analysis and qualitative research were used in this study. This study indicates from qualitative evaluations that bank mergers benefit the newly merged firm, shareholders, and customers.

Senger, Badhotiya, Singh, and Negi (2021) examined how M&As increased revenue, competitive advantage, and strategic initiatives like product management. India, Pakistan, and Bangladesh M&A data was collected from 2000 to 2009. Trend and hypothesis analysis of important financial indicators was used in quantitative research. They investigated financial

performance metrics before and after mergers, concentrating on trends and theories. The hypothesis analysis demonstrated both an increase and a fall in financial parameters for the acquirer and acquired institutions, supporting the conclusion that major financial indicators grew consistently after the merger. The analysis proved the acquirer's gains and transaction success.

Ahmed, Talreja, Shah, Asad, and Sakina (2022) examined how bank M&A affects SSA banks' performance between 2003 and 2019. Data from 2003 to 2019 was analyzed using that frequency set. The report employed dynamic panel Generalized Methods of Moments to study bank M&As and profitability. Variables included bank risk, liquidity, NIM, ROA, ROE, and costs-to-income ratios. The overall sample and two sub-samples showed no profitability growth after M&A across all criteria. Instead, the study found that all profitability measurements, especially those caused by regulations, decreased bank profitability after M&A, with the negative effects lasting into the sixth year.

Herwadkar, Gupta, and Chavan (2022) examined the current merger trend in Indian banks. This study assessed the short- and medium-term effects of bank mergers on the acquiring institution using 1997 data. Data envelopment analysis (DEA) shows that acquirers' size or production increased post-merger efficiency. Financial ratio analysis supports efficiency study findings by comparing acquirers' pre- and post-merger performance. Based on 2019–2020 bank merger event study techniques, the acquired bank's shareholders' value grew. The study found that post-merger bank efficiency gains are driven by a focus on interest income and geographical variation.

Kunwar and Paudel (2023) studied how economic liberalization policies like globalization, privatization, and deregulation drove M&A as a strategic instrument for worldwide business expansion. This study examined 28 commercial bank mergers between 1994 and 2010. The descriptive research sample included eight merging Nepalese commercial banks. The combined institutions' EPS, ROE, spread ratio, NPM, capital sufficiency and NPL were examined. NPL, spread ratio, NPM, ROA, and EPS declined while CAR, ROE, and CETA ratios grew for the eight sample banks.

Adhikari, Kavanagh, and Hampson (2023) evaluated Nepalese commercial banks' financial performance after mergers. Not including the merger year, 2010–2019 data was examined. Analyzing data with VIF, regression, Pearson correlation, mean, standard deviation, and paired sample t-test. Nine metrics EPS, NWPS, P/E, CD, CAR, NPL, ROA, ROE, and NPM assessed financial performance. Pre- and post-merger EPS, NWPS, ROA, and NPM comparisons were significant. In some NRB-regulated areas, the merger did not significantly affect profitability, but other ratios showed positive relationships. CAR shaped ROA most before and after the merger. These findings aid managers in merger decisions and help explain Nepalese banking industry merger trends and regulatory implications.

Georgios (2023) examined how mergers and acquisitions affected banks' operational characteristics, profitability, and liquidity. Secondary data from 2011-2018 was used for a multi-year analysis. Financial analysis assessed profitability, liquidity, and operational ratios. Profitability, liquidity, and operational parameters were analyzed for post-acquisition improvements. Alpha Bank of Greece acquired Emporiki Bank of Greece, improving profitability, liquidity, and operational effectiveness. Financial ratios before and during the acquisition proved Alpha Bank met its goals.

Ndunge and Joshua (2023) examined how M&A affects Kenyan insurers' finances. Data on insurance M&A frequency from the past five years was collected. Descriptive research was used to analyze data. Asset growth and merger-acquisition synergy were evaluated. Asset growth and synergy strongly affected financial performance, demonstrating a link. Strategic

mergers and acquisitions could boost insurance companies' financial performance by harnessing synergies for economies of scale, according to the report.

Darayseh and Alsharari (2023) evaluated the factors affecting UAE banking mergers and acquisitions. Various business sources offered 2000–2017 data on bank mergers. Data was collected and analyzed using surveys and quantitative research. Revenue, growth, expenses, survival, diversity, security, risk, and legal were examined. The findings supported key banking industry M&A procedures. The author suggests expanding the analysis to additional GCC nations, studying nonfinancial bank features, and researching international bank acquisitions.

Sari, Jr, and Andriani (2023) compared IDX banking industry companies' financial performance before and after mergers and acquisitions. The analysis used two years of data from idx.co.id before and after the M&A. Selected variables were Total Asset Turnover, EPS, CR, DER, ROA, and NPL. The Wilcoxon signed test showed significant differences in TATO and EPS post-merger or acquisition, but not in CR, DE, ROA, or NPL.

Singh et al. (2023) studied Nepali microfinance institutions' financial performance after mergers and acquisitions. Annual data from Nepalese microfinance institutions from 3 to 4 years before and after the merger were analyzed to provide complete insight. Data was analyzed using paired sample t-tests. EPS, ROE, ROA, NPM, CR, NIM, P/E, and D/E were examined. The merger did not improve Nepal's microfinance organizations' financial performance, according to the investigation. Financial indicators were mostly constant except for the DE, which rose.

Almustapha and Ibrahim (2023) studied how M&A affects Nigerian listed commercial banks. From 2010 to 2021, First City Monument Bank, Eco Bank, and Access Bank annual reports and financial statements were used to collect data. Secondary data was used to estimate and test hypotheses using Ordinary Least Squares. Growth in total assets, EPS, and profitability were examined. M&A improved total assets, EPS, and profitability of listed Nigerian commercial banks. Thus, the study suggested M&A as a growth strategy for underperforming enterprises to avoid costly owner and economic effects.

Gciku (2023) examined Kenyan commercial banks' operational efficiency after M&A. From 2005 to 2019, CBK bank supervision annual reports, banks' financial statements, and annual reports provided data. Pairwise and independent t-tests were performed for quantitative data analysis. They examined operating efficiency, ROA, and EPS for mergers and acquisitions. Significant statistical changes in operating efficiency and ROA were found pre- and post-merger. EPS was not different. Business model transformation, new technology, and institutional stability. They were suggested to boost efficiency post-merger.

Khan, Tabassum, and Syed (2024) explored banking M&A drivers, difficulties, and solutions. Data from 2017 to 2023 was used with undetermined frequency during the merging. They used mixed approaches to uncover M&A reasons and evaluate the merger's financial impact. The analysis included economies of scale, strategic alignment, ROA, and ROE. Analysis of the Saudi National Bank (SNB) after the SAMBA and NCB merger illuminated financial performance, expanding theoretical understanding. The study contributed to M&A conversation and gave scholars, practitioners, and policymakers corporate strategy and financial dynamics viewpoints.

Indira and Ridwan (2024) assessed how acquiring other companies for business growth affects a company's finances. The financial performance before and after the acquisition of PT Telkom Indonesia (Persero) Tbk was analyzed using 2015-2018 and 2020-2023 data. Data analysis included quantitative, descriptive, and comparative methods. The current ratio, Return on Investment, debt-to-balance sheet volume ratio, and pre-transaction to post-

transaction sales were examined. The analysis found significant differences in the current ratio and Return on Investment before and after the acquisition. The debt-to-balance sheet size ratio and pre-sales-to-post-transaction sales ratio did not change.

3. Data and Methodology

To meet the research objectives, the secondary data has been employed. Data Information has been taken from the Pakistan Stock Exchange, State Bank of Pakistan, Securities and Exchange Commission of Pakistan, and Competition Commission of Pakistan as well as from the annual reports of several selected banks. For this purpose, data has been taken for banks engaged in M&A periods from 2005 to 2022. To determine the impact of mergers and acquisitions. The sample for our study is comprised of 4 banks to evaluate a chosen bank's financial performance in pre- and post-merger and acquisition situations. Banks include Meezan Bank Limited, Muslim Commercial Bank, Al Baraka Limited and Bank Islami Pakistan Limited. The effects of mergers and acquisitions on performance are identified through appropriate statistical data techniques. This study used sample paired t-test, correlation, and regression analysis. The below table indicates the selected parameters to meet the objectives of this study.

Table 1
Variables Proxy and Measurement

Ratios	Variables	Measurement	Source
Profitability	Return on Asset	Net profit after tax/Total Equity	(Abbas, Rashid, Ehsan Ul, & Shahzad Ijaz, 2014; Abdulwahab & Ganguli, 2017; Adhikari et al., 2023; Al-Hroot, Al-Qudah, & Alkharabsha, 2020; Lai, 2015; Sari et al., 2023; Shah & Khan, 2017; Singh et al., 2023)
	Return on Equity	Net profit after tax/Total Assets	
	Net Interest Margin	Interest earned-interest expense/Total Assets	
Liquidity	Cash & Cash Equivalent to Total Asset	Cash & Cash Equivalent/Total Assets	
	Investment to Total Asset	Investment/Total Assets	
Leverage	Debt to Equity	Total Debt/Total Equity	
	Capital Adequacy Ratio	Total Equity/Total Assets	
	Total Loan to Total Deposit	Total Loans/Total Deposit	
	Non-performing Loans to Total Loans	Total Non-Performing Loans/Total Loans	
Wealth of Shareholders	Earnings per Share	Net profit after tax/No. of ordinary shares	
	Market Price per Share	Closing price of ordinary shares traded on the stock exchange	

Statistical Model for the Study.

$$ROA = \beta_0 + \beta_1 NIM + \beta_2 CETA + \beta_3 ITA + \beta_4 DE + \beta_5 CAR + \beta_6 TLTDO + \beta_7 NPL + \beta_8 EPS + \beta_9 MPS + \beta_{10} DPS + \varepsilon_t \quad (1)$$

Whereas:

β_0 = Coefficient of intercept (Constant),
β_1 - β_{10} = Coefficient of slops,
NIM = Net Interest Margin
CETA = Cash & Cash Equivalent to Total Asset,
ITA = Investment to Total Asset,
DE = Debt to Equity
CAR = Capital Adequacy Ratio,
TLTDO = Total Loan to Total Deposit,
NPL = Non-performing Loans to Total Loans
EPS = Earnings per Share,
MPS = Market Price per Share,
DPS = Dividend per Share,
ε_t = Error Term

4. Results and Discussion

The below figure indicates the performance of MBL in pre and post-context. It is very clear that ROA declined from 2012 to 2015 but stabilized and increased after the merger in 2015. The performance graph increased up to 2018.

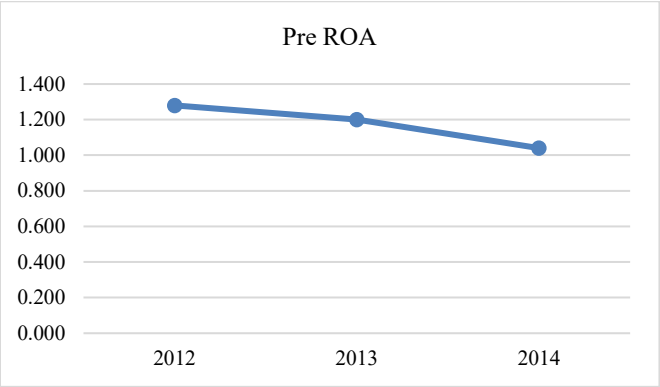


Figure 1: Pre ROA of MBL

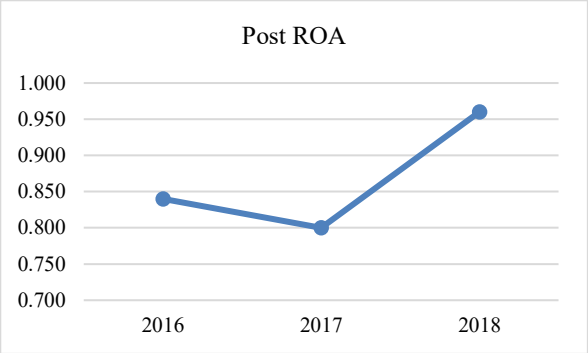


Figure 2: Post ROA of MBL

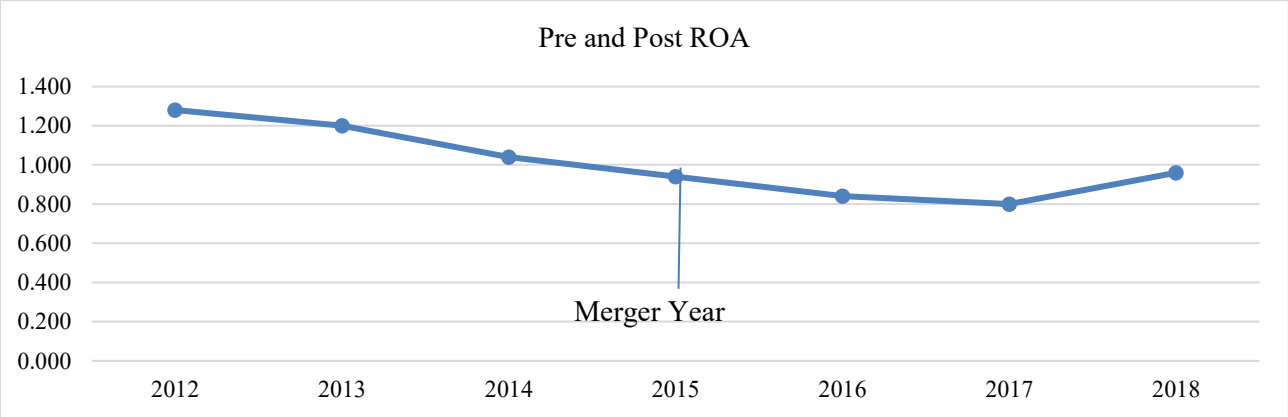


Figure 3: Pre and Post Return on Assets of Meezan Bank Limited (MBL)

The below figure indicates the performance of MBL in pre and post-context. It is very clear that ROE declined slightly from 2012 to 2014 but stabilized after the merger in 2015, and in 2018, ROE increased significantly after merger.

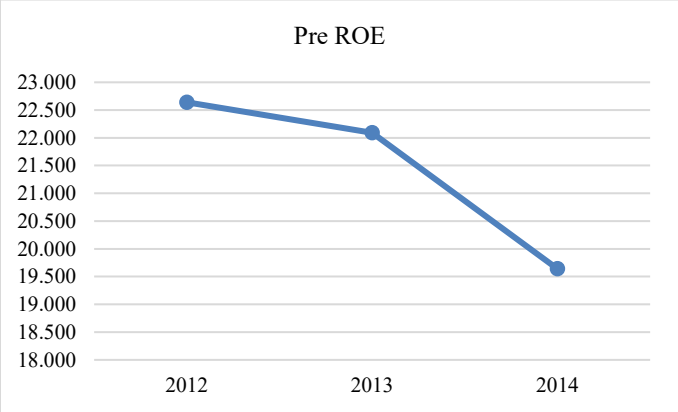


Figure 4: Pre ROE of MBL

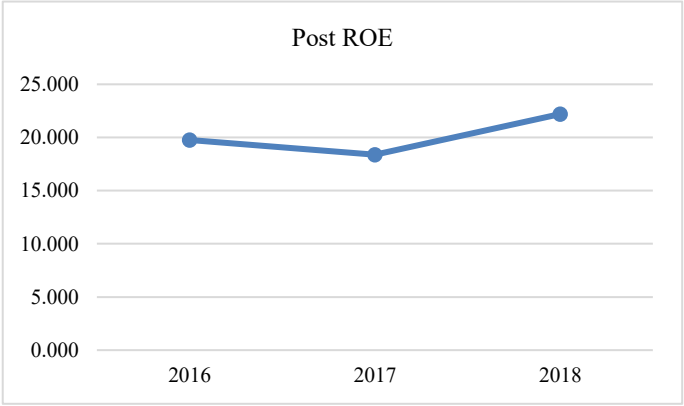


Figure 5: Post ROE of MBL

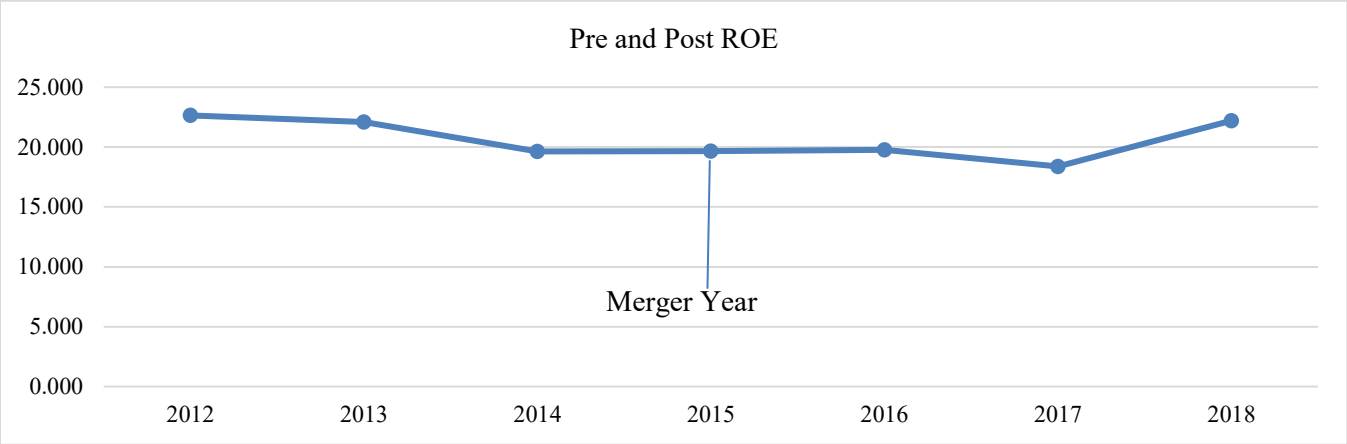


Figure 6: Pre and Post Return on Equity of Meezan Bank Limited (MBL)

The below figure indicates the performance of MBL in pre and post-context. It is very clear that NIM declined slightly from 2012 to 2014 but stabilized after the merger in 2015, and in 2018, NIM increased significantly after merger.

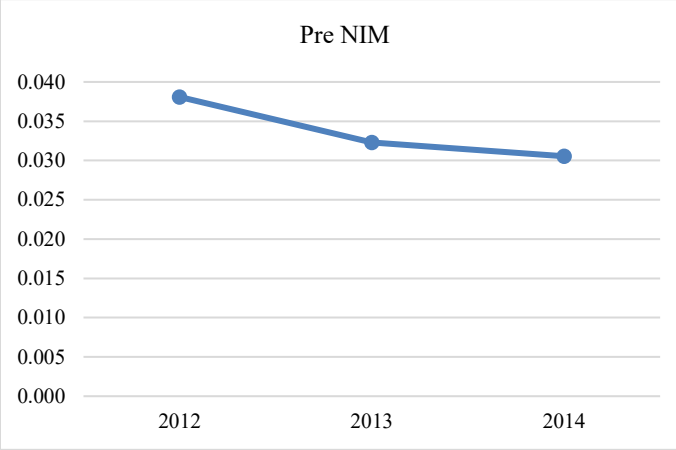


Figure 7: Pre NIM of MBL

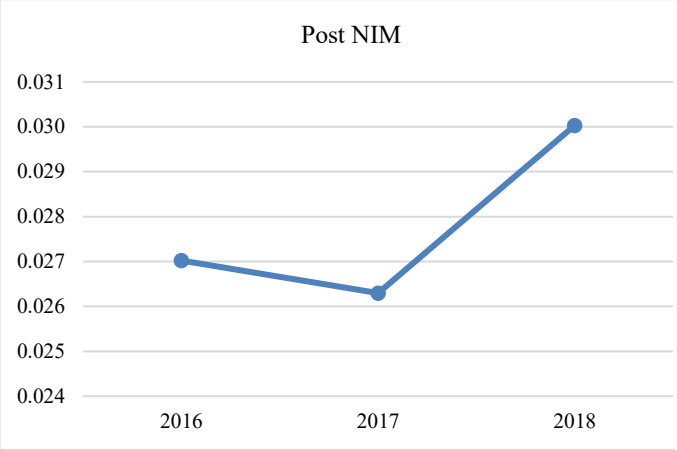


Figure 8: Post NIM of MBL

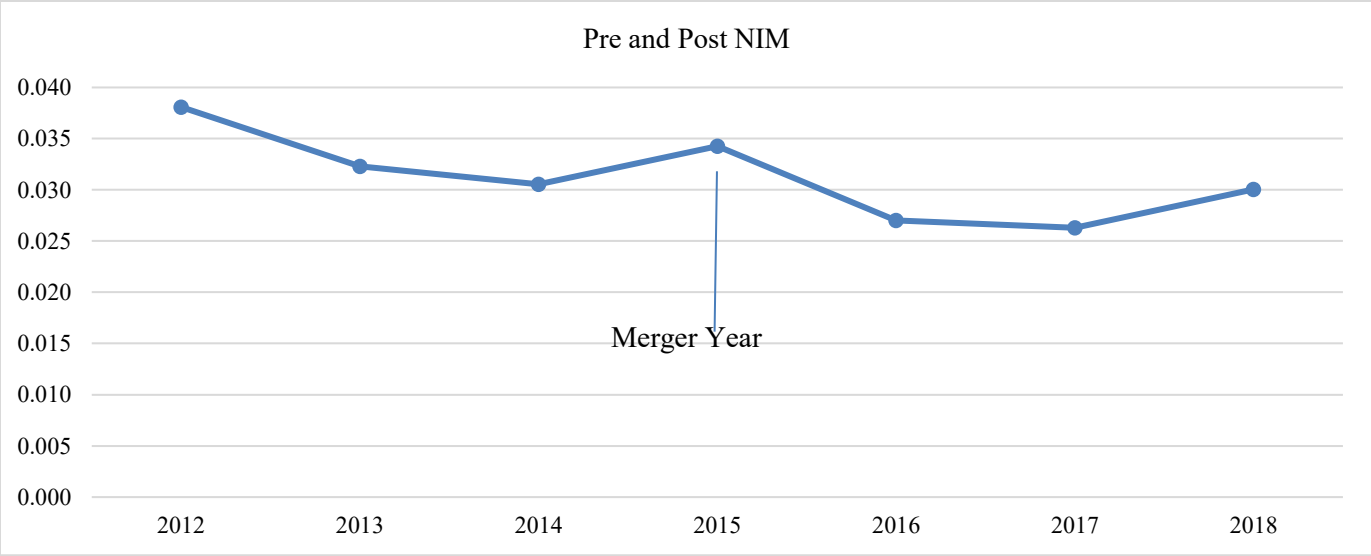


Figure 9: Pre and Post Net Interest Margin of Meezan Bank Limited (MBL)

Table 2
Paired Samples t-test of the Meezan Bank Limited (MBL)

Meezan Bank Limited Paired Samples T-Test		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Dev.	Std. Error Mean	95% Confid. Interval of the Diff.				
					Lower	Upper			
Pair 1	ROA Pre – ROA Post	0.306	0.197	0.113	-0.183	0.796	2.692	2	0.11
Pair 2	ROE Pre – ROE Post	1.343	3.405	1.966	-7.117	9.803	0.683	2	0.56
Pair 3	NIM Pre – NIM Post	0.005	0.005	0.003	-0.007	0.019	1.917	2	0.19
Pair 4	CETA Pre – CETA Post	-0.24	1.489	0.859	-3.939	3.459	-0.279	2	0.8
Pair 5	ITA Pre – ITA Post	26.53	12.072	6.969	-3.458	56.52	3.806	2	0.06*
Pair 6	DE Pre – DE Post	-4.948	0.734	0.424	-6.773	-3.123	-11.66	2	0.00***
Pair 7	CAR Pre – CAR Post	1.163	0.207	0.12	0.646	1.679	9.691	2	0.01**
Pair 8	TLTDO Pre – TLTDO Post	-0.04	0.026	0.015	-0.107	0.025	-2.639	2	0.11
Pair 9	NPL Pre – NPL Post	0.026	0.002	0.001	0.02	0.033	18.236	2	0.00***
Pair 10	EPS Pre – EPS Post	-2.256	0.756	0.436	-4.135	-0.378	-5.169	2	0.03**
Pair 11	MPS Pre – MPS Post	-24.08	7.36	4.249	-42.36	-5.791	-5.665	2	0.03**

Note: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%

Table 3
Comparison of financial ratios of Meezan Bank Limited (MBL)

Sr.#	Ratios	Average Pre	Average Post	Change	Relative Change
1	ROA	1.173	0.866	-0.306	-26.136
2	ROE	21.456	20.113	-1.343	-6.26
3	NIM	0.033	0.027	-0.005	-17.406
4	CETA	8.723	8.963	0.24	2.751
5	ITA	42.52	15.99	-26.53	-62.394
6	DE	17.257	22.205	4.948	28.674
7	CAR	5.466	4.303	-1.163	-21.28
8	TLTDO	1.092	1.133	0.04	3.74
9	NPL	0.035	0.009	-0.026	-74.587
10	EPS	4.13	6.386	2.256	54.64
11	MPS	22.003	46.08	24.076	109.422
12	DPS	0.000	0.000	0.000	7.986

Using a paired samples t-test, this research, the above table compares pre- and post-period averages to identify significant changes. The ITA decreased distinctly by 26.530 (62.39%), statistical significance ($p < 0.10$), suggesting a notable reduction in the proportion of investments to total assets. The DE increased by 4.948 (28.67%), statistically significantly ($p < 0.01$), highlighting a substantial reliance on debt financing, which may affect financial stability and increase risk exposure. CAR declined by 1.163 (21.28%), statistically significant ($p < 0.05$), reflecting a reduced capacity to absorb losses, indicating potential concerns for capital adequacy. NPL decreased by 0.026 (74.59%), statistically significant ($p < 0.01$), reflecting an improvement in loan quality and enhanced risk management practices. EPS increased by 2.256 (54.64%), a statistically significant change ($p < 0.05$), indicating improved profitability per share, enhancing shareholder value. The MPS increase by 24.076 (109.42%), with significance ($p < 0.05$), signifying strong market confidence and positive investor sentiment. The DPS remained unchanged, indicating a stable dividend policy during the study period. This analysis identifies significant changes in ITA, DE, CAR, NPL, EPS, and MPS, indicating important shifts in financial stability, risk management, and market performance for MBL. Favorable outcomes, including the reduction in NPL and increases in EPS and MPS, reflect positive trends. Non-significant changes in ROA, ROE, NIM, CETA, and TLTDO still offer valuable insights, with declines in ROA, ROE, and NIM indicating slightly lower asset efficiency and profitability.

The below figure indicates the performance of MCB in pre and post-context. It is very clear that ROA declined from 2015 to 2017 but stabilized and increased after the merger in 2017.

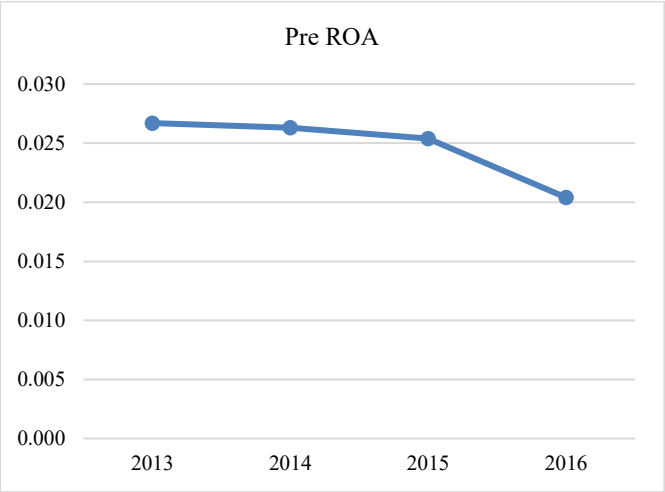


Figure 10: Pre ROA of MCB

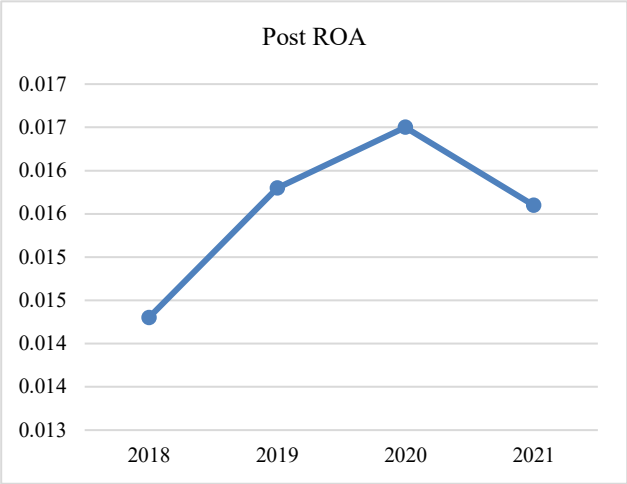


Figure 11: Post ROA of MCB

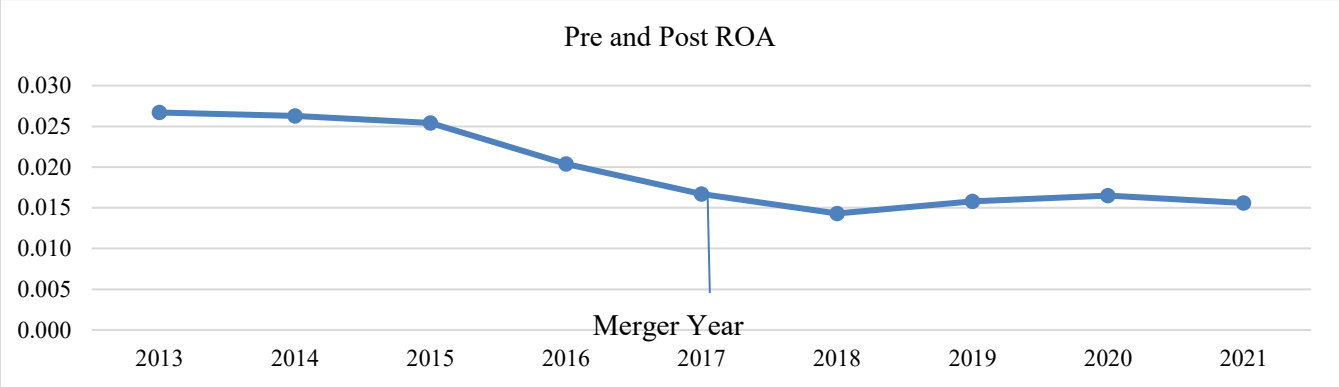


Figure 12: Pre and Post Return on Assets of Muslim Commercial Bank (MCB)

The below figure indicates the performance of MCB in pre and post-context. It is very clear that ROE declined from 2015 to 2017 but stabilized and increased after the merger in 2017.

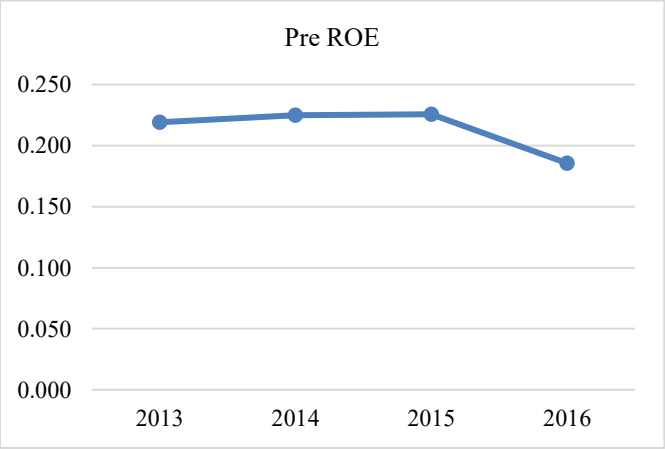


Figure 13: Pre ROE MCB

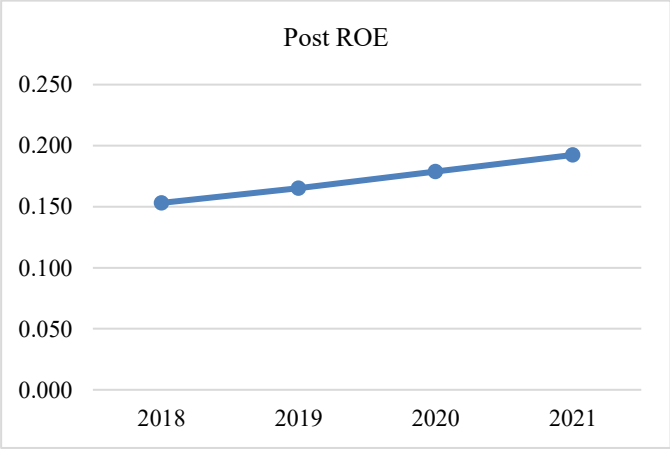


Figure 14: Post ROE MCB

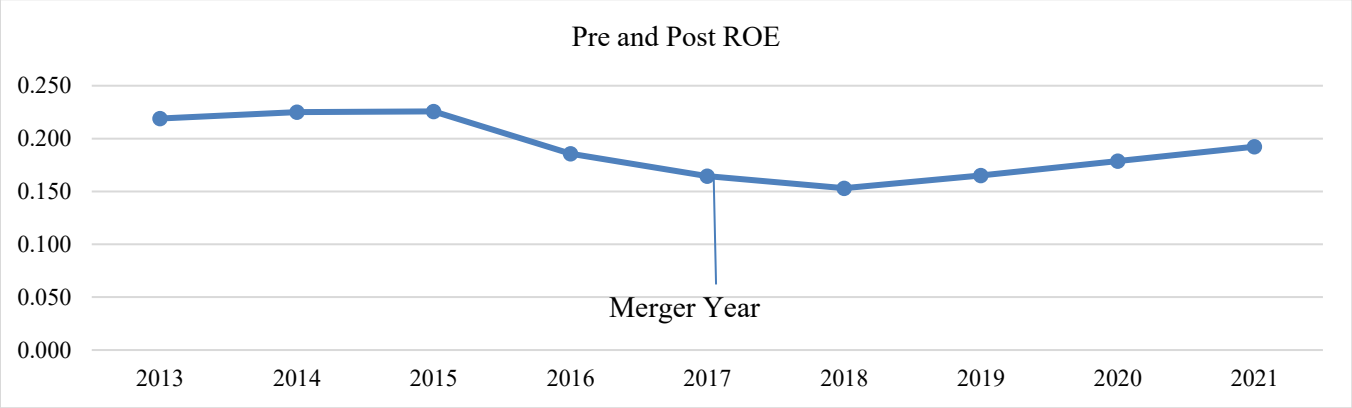


Figure 15: Pre and Post Return on Equity of Muslim Commercial Bank (MCB)

The below figure indicates the performance of MCB in pre and post-context. It is very clear that NIM declined from 2015 to 2017 but stabilized after the merger in 2017.

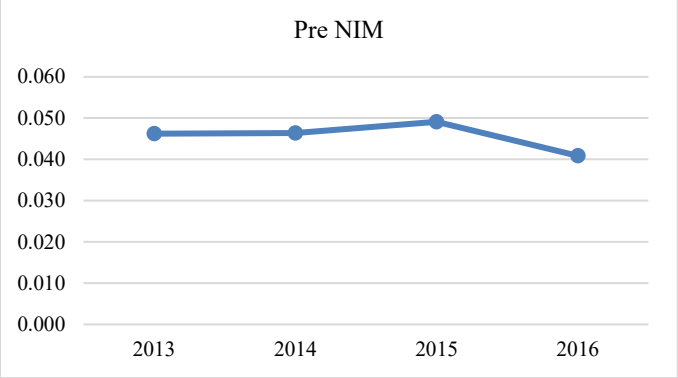


Figure 16: Pre NIM of MCB

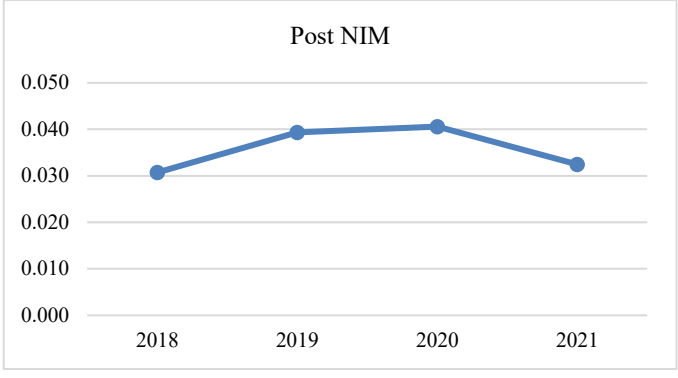


Figure 17: Post NIM of MCB

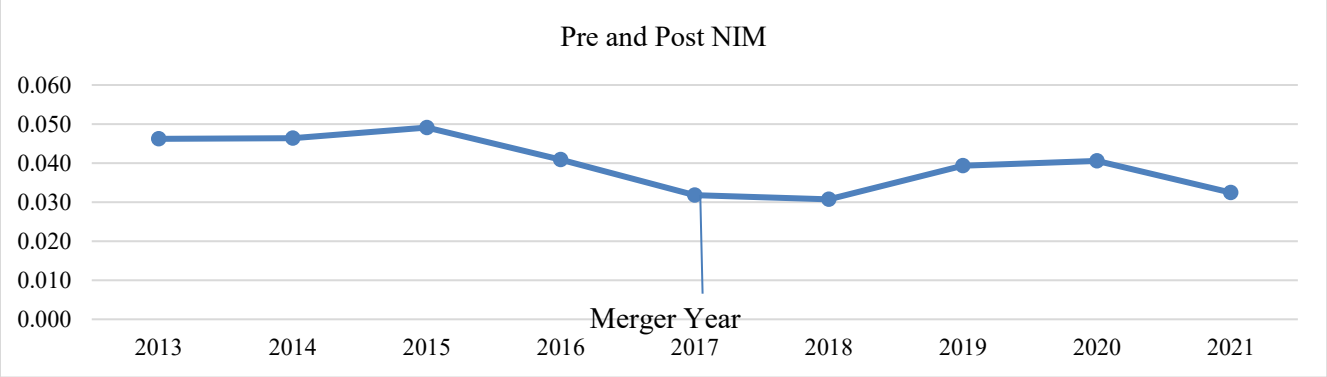


Figure 18: Pre and Post Net Interest Margin of Muslim Commercial Bank (MCB)

Using a paired samples t-test, this research. The above table compares pre- and post-period averages to identify significant changes. The ROA decreased by -0.009 (-37.04%), a statistically significant change ($p < 0.05$), indicating reduced asset utilization efficiency. ROE declined by -0.041 (-19.41%), a statistically significant ($p < 0.10$), suggesting a potential decrease in shareholder profitability. NIM declined by -0.009 (-21.59%), a significant result ($p < 0.05$), implying diminished efficiency in generating interest income. DE increased by 2.474 (33.09%), a significant change ($p < 0.01$), reflecting higher debt reliance and financial leverage. NPL increased by 0.006 (25.06%), a significant result ($p < 0.05$), indicating

heightened credit risk due to a rise in non-performing loans. EPS increased by 0.545 (2.52%) statistical significance ($p < 0.10$), suggesting a minor improvement in profitability per share. MPS fell by -67.920 (-26.69%), with a significant result ($p < 0.05$), warranting further exploration due to a noticeable market valuation decline. This analysis highlights significant shifts in ROA, **ROE, NIM**, DE, NPL, EPS and MPS, revealing areas of concern and improvement for Muslim Commercial Bank. Conflicting practical and statistical results indicate the need for a comprehensive assessment to accurately gauge the impact on the bank's financial health.

Table 4
Paired Samples t-test of the Muslim Commercial Bank (MCB)

Muslim Commercial Bank Paired Samples T-Test									
		Paired Differences					t	df	Sig.(2-tailed)
		Mean	Std. Dev.	Std. Error Mean	95% Confid. Interval of the Diff. Lower	Upper			
Pair 1	ROA Pre – ROA Post	0.008	0.003	0.001	0.002	0.014	4.636	3	0.01**
Pair 2	ROE Pre – ROE Post	0.041	0.032	0.016	-0.01	0.093	2.545	3	0.08*
Pair 3	NIM Pre – NIM Post	0.009	0.003	0.001	0.004	0.015	5.426	3	0.01**
Pair 4	CETA Pre – CETA Post	-2.958	7.524	3.762	-14.93	9.015	-0.79	3	0.48
Pair 5	ITA Pre – ITA Post	-12.13	47.897	23.948	-88.34	64.089	-0.51	3	0.64
Pair 6	DE Pre – DE Post	-2.474	0.643	0.321	-3.498	-1.449	-7.69	3	0.00***
Pair 7	CAR Pre – CAR Post	0.861	11.763	5.881	-17.86	19.58	0.146	3	0.89
Pair 8	TLTDO Pre – TLTDO Post	-0.057	0.088	0.044	-0.197	0.083	-1.29	3	0.28
Pair 9	NPL Pre – NPL Post	-0.006	0.003	0.001	-0.012	-0.001	-4.09	3	0.02**
Pair 10	EPS Pre – EPS Post	-0.545	4.429	2.214	-7.594	6.504	-0.25	3	0.082*
Pair 11	MPS Pre – MPS Post	67.92	29.114	14.557	21.592	114.25	4.666	3	0.01**
Pair 12	DPS Pre – DPS Post	-3.375	5.088	2.544	-11.47	4.722	-1.33	3	0.27

(*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%

Table 5
Comparison of financial ratios of Muslim Commercial Bank (MCB)

Sr.#	Ratios	Average Pre	Average Post	Change	Relative Change
1	ROA	0.024	0.015	0	-37.044
2	ROE	0.213	0.172	-0.041	-19.406
3	NIM	0.045	0.035	-0.009	-21.59
4	CETA	3.462	6.42	2.958	85.467
5	ITA	27.315	39.441	12.126	44.392
6	DE	7.477	9.951	2.474	33.088
7	CAR	5.627	4.765	-0.861	-15.305
8	TLTDO	1.18	1.237	0.057	4.835
9	NPL	0.026	0.033	0.006	25.056
10	EPS	21.642	22.187	0.545	2.518
11	MPS	254.432	186.512	-67.92	-26.694
12	DPS	3.625	7	3.375	93.103

The below figure indicates the performance of ABPL in pre and post-context. It is very clear that ROA declined from 2011 to 2015 but stabilized and increased after the merger in 2016.

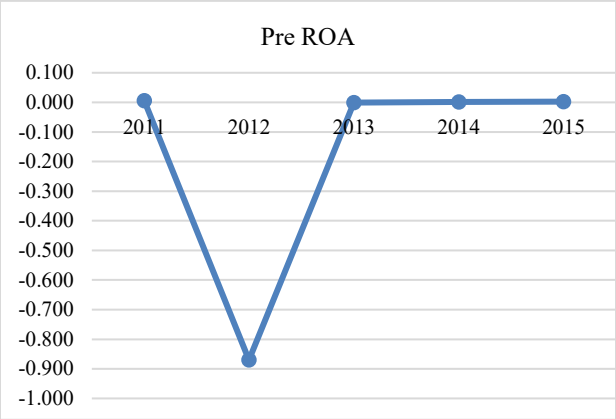


Figure 19: Pre ROA of ABPL

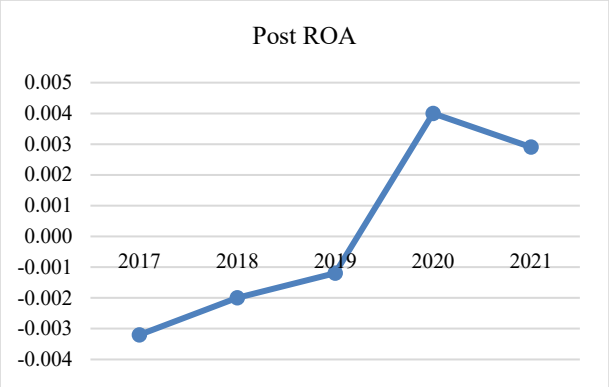


Figure 20: Post ROA of ABPL

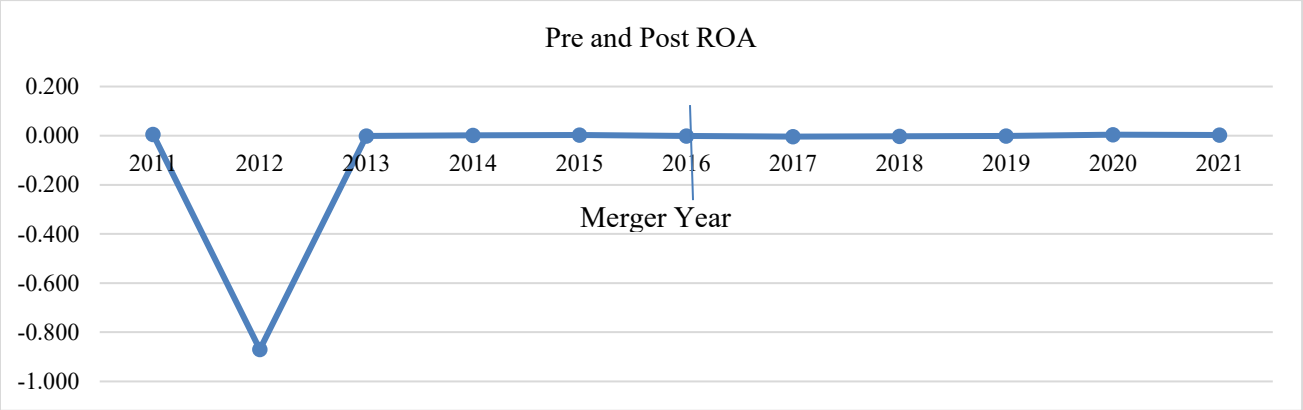


Figure 21: Pre and Post Return on Assets of Al Baraka Bank Pakistan Limited (ABPL)

The below figure indicates the performance of ABPL in pre and post-context. It is very clear that ROE declined from 2011 to 2015 but stabilized after the merger in 2016 ROE upward trend, peaking in 2020. The performance graph increases up to 2021.

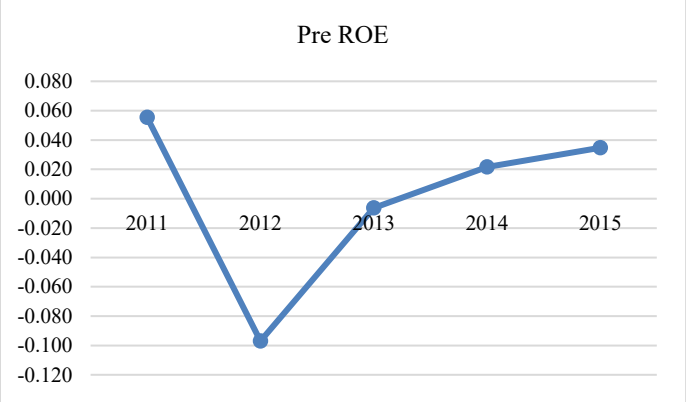


Figure 22: Pre ROE of ABPL

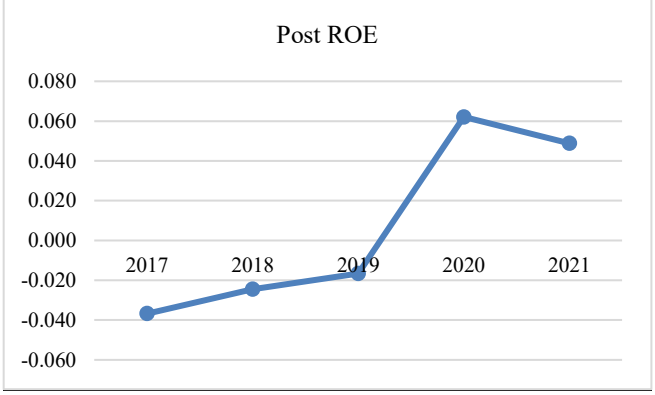


Figure 23: Post ROE of ABPL

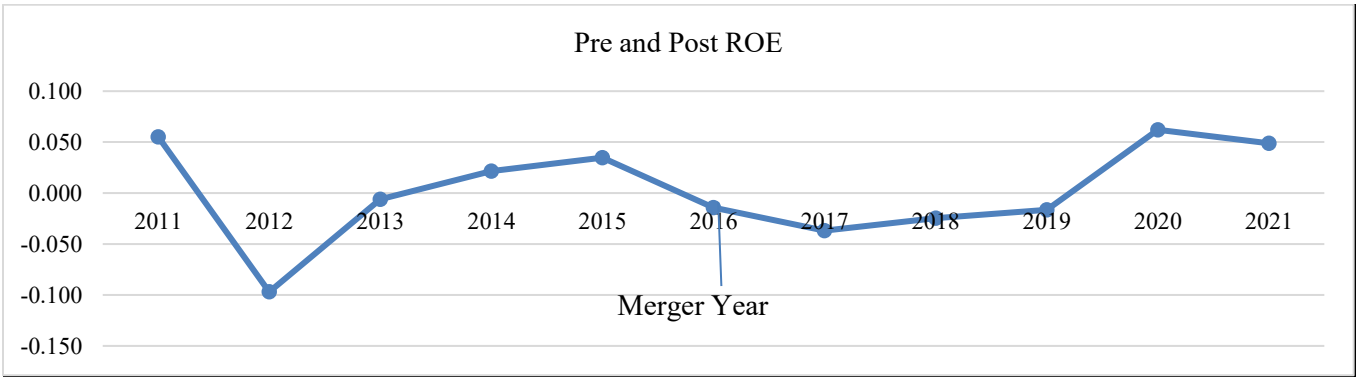


Figure 24: Pre and Post Return on Equity of Al Baraka Bank Pakistan Limited

The below figure indicates the performance of ABPL in pre and post-context. NIM was stable until a notable rise in the 2016 merger year. Post-merger, NIM declined significantly, then returned to pre-merger stability with minor fluctuations from 2017 to 2021, indicating consistent income efficiency, a merger-year peak, and subsequent stabilization.

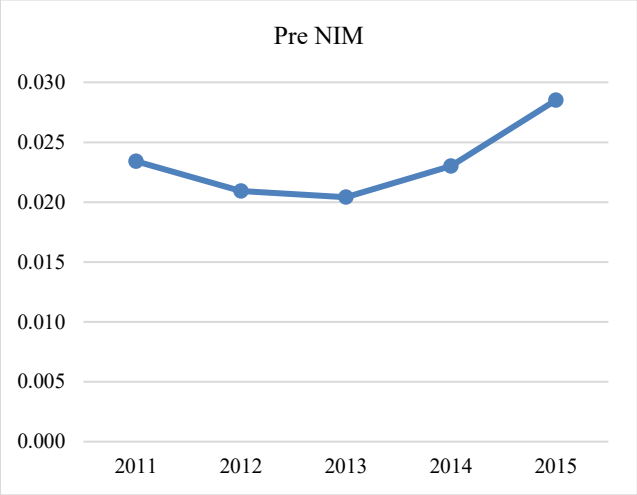


Figure 25: Pre NIM of ABPL

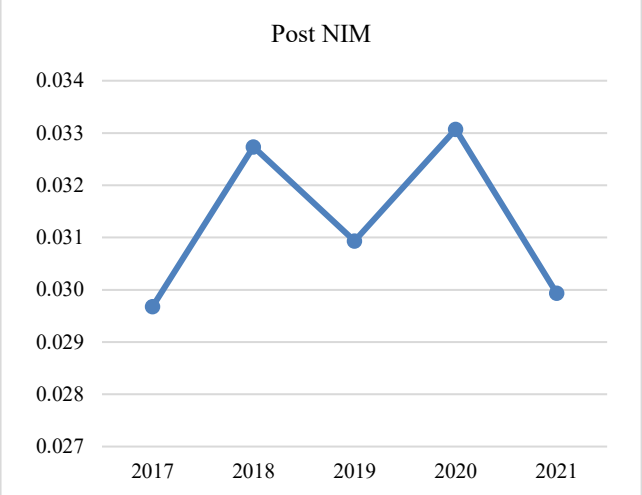


Figure 26: Post NIM of ABPL

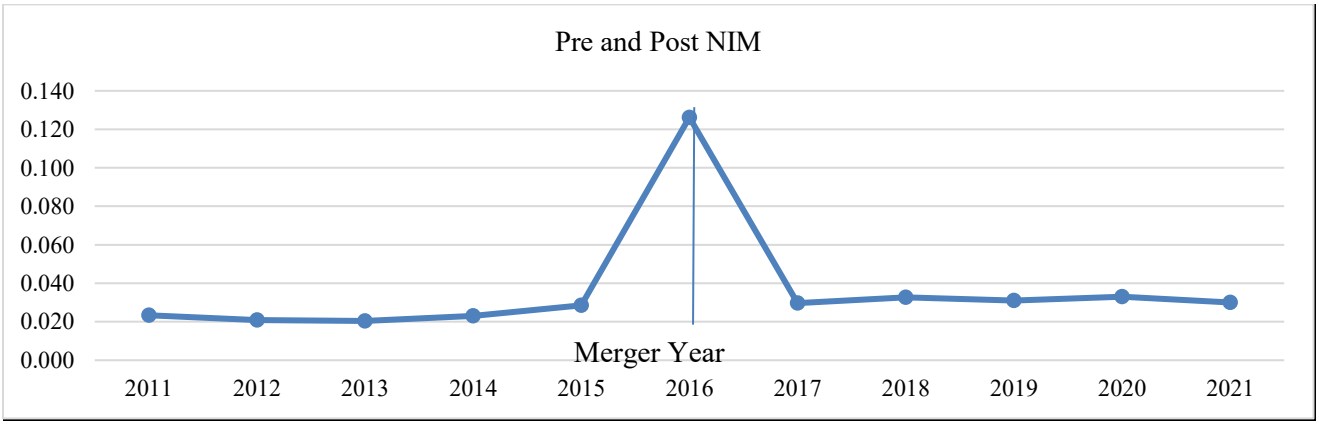


Figure 27: Pre and Post Net Interest Margin of Al Baraka Bank Pakistan Limited

Table 6
Paired Samples t-test of the Al Baraka Bank Pakistan Limited (ABPL)

Al Baraka Bank Pakistan Limited Paired Samples T-Test		Paired Differences					t	df	Sig.
		Mean	Std. Dev.	Std. Error Mean	95% Confid. Interval of the Diff. Lower	Upper			(2-tailed)
Pair 1	ROA Pre – ROA Post	-0.17	0.388	0.173	-0.655	0.31	-0.99	4	0.37
Pair 2	ROE Pre – ROE Post	-0	0.062	0.027	-0.081	0.072	-0.17	4	0.87
Pair 3	NIM Pre – NIM Post	-0.01	0.004	0.001	-0.013	-0.002	-4.13	4	0.01**
Pair 4	CETA Pre – CETA Post	0.03	0.04	0.017	-0.019	0.079	1.688	4	0.16
Pair 5	ITA Pre – ITA Post	0.049	0.173	0.077	-0.165	0.264	0.64	4	0.55
Pair 6	DE Pre – DE Post	-1.78	1.428	0.639	-3.557	-0.008	-2.79	4	0.04**
Pair 7	CAR Pre – CAR Post	0.011	0.006	0.003	0.003	0.019	3.787	4	0.01**
Pair 8	TLTDO Pre – TLTDO Post	-6.06	8.184	3.66	-16.23	4.098	-1.66	4	0.17
Pair 9	NPL Pre – NPL Post	0.005	0.014	0.006	-0.012	0.023	0.872	4	0.43
Pair 10	EPS Pre – EPS Post	-0.05	0.511	0.228	-0.689	0.581	-0.24	4	0.82
Pair 11	MPS Pre – MPS Post	0.34	0.09	0.04	0.228	0.453	8.413	4	0.00***
Pair 12	DPS Pre – DPS Post	0.021	0.013	0.006	0.003	0.038	3.384	4	0.02**

(*) Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%

Table 7
Comparison of financial ratios of Al Baraka Bank Pakistan Limited (ABPL)

Sr.#	Ratios	Average Pre	Average Post	Change	Relative Change
1	ROA	-0.172	0	0.172	-100.058
2	ROE	0.001	0.006	0.004	292.857
3	NIM	0.023	0.031	0.008	34.497
4	CETA	0.162	0.131	-0.03	-18.763
5	ITA	0.273	0.224	-0.049	-18.075
6	DE	11.284	13.067	1.782	15.797
7	CAR	0.083	0.072	-0.011	-13.426
8	TLTDO	1.091	7.155	6.064	555.766
9	NPL	0.066	0.06	-0.005	-8.355
10	EPS	0.024	0.078	0.054	225.0
11	MPS	0.647	0.306	-0.34	-52.643
12	DPS	0.037	0.016	-0.021	-56.756

Using a paired samples t-test, this research. The above table compares pre- and post-period averages to identify significant changes. NIM increased by 0.008 (34%), a statistically significant change ($p < 0.05$), reflecting a reliable improvement in interest income efficiency. DE increased by 1.782 (16%) a statistically significant ($p < 0.05$), showing an increased debt load relative to equity, potentially impacting financial stability. CAR declined by 0.011 (13%), although statistical significance ($p < 0.05$). MPS declined by 0.340 (53%) a statistically significant change ($p < 0.01$), indicating a real and concerning drop in share market value. DPS decreased by 0.021 (57%), significantly ($p < 0.05$), reflecting an actual reduction in shareholder returns, possibly affecting investor sentiment. Overall, significant changes in NIM, DE, CAR, MPS, and DPS reveal areas of substantial improvement or concern, reflecting the bank's financial strategies and outcomes. Non-significant changes in other ratios suggest stability or minor shifts. This analysis emphasizes the role of statistical significance and practical relevance in assessing financial performance comprehensively.

The below figure indicates the performance of BIPL in pre and post-context. It is very clear that ROA fluctuated from 2010 to 2015 but decreased after the merger in 2016.

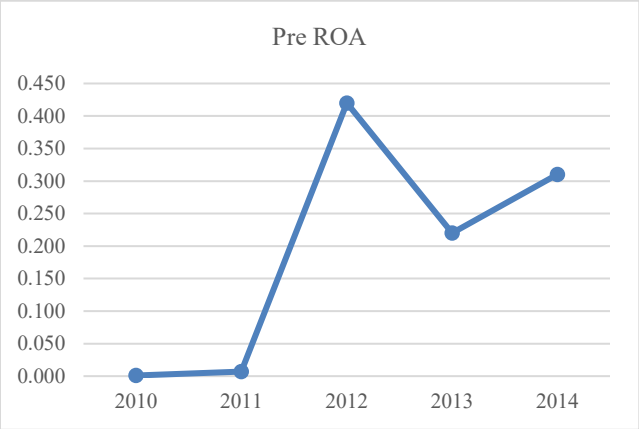


Figure 28: Pre ROA of BIPL

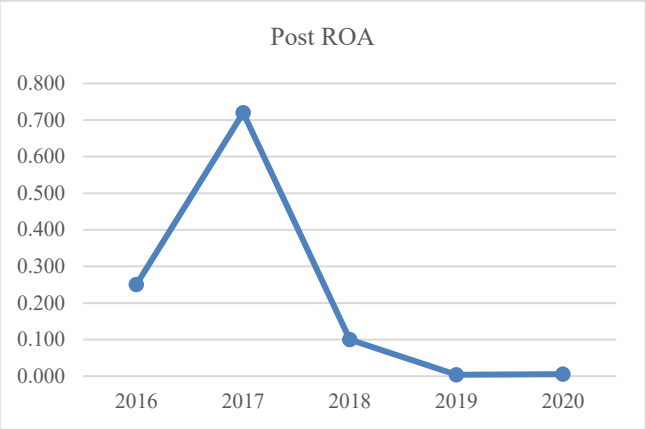


Figure 29: Post ROA of BIPL

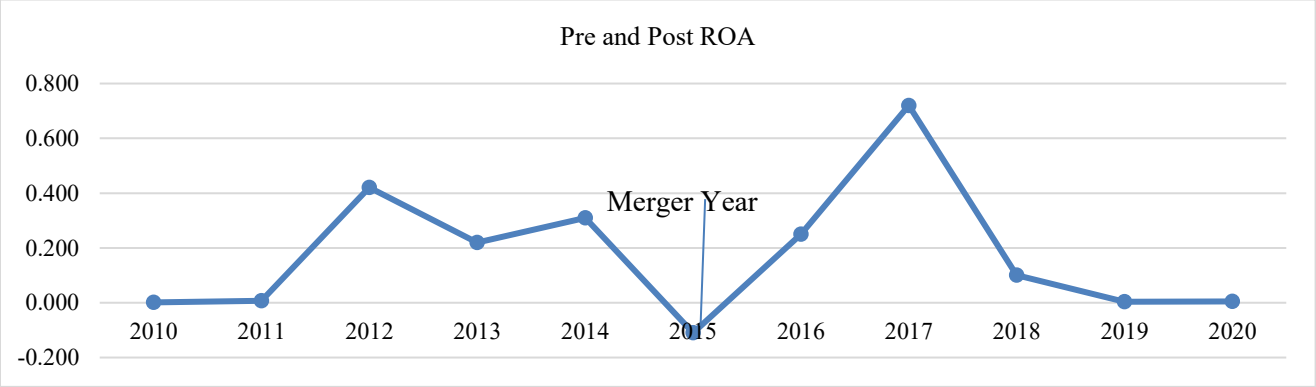


Figure 30: Pre and Post Return on Assets of Bank Islami Pakistan Limited (BIPL)

The below figure indicates the performance of BIPL in pre and post-context. It is very clear that ROE fluctuated from 2010 to 2015 and stabilized after the merger in 2016 the performance graph fluctuated up to 2020. This reflects fluctuating pre-merger efficiency, a merger-year dip, a rapid post-merger rise, and a later decline.

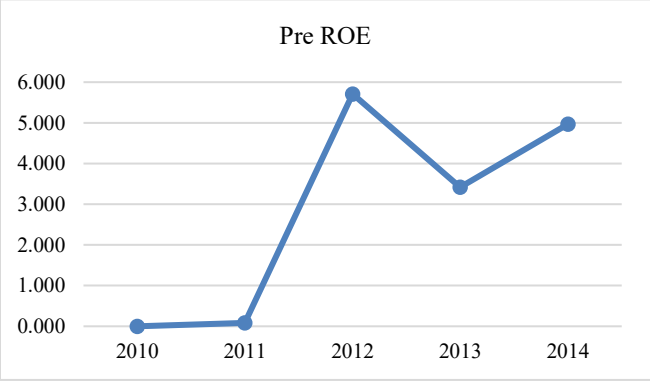


Figure 31: Pre ROE of BIPL

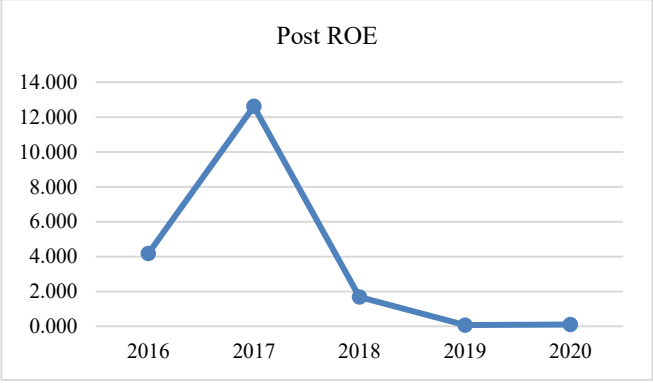


Figure 32: Post ROE of BIPL

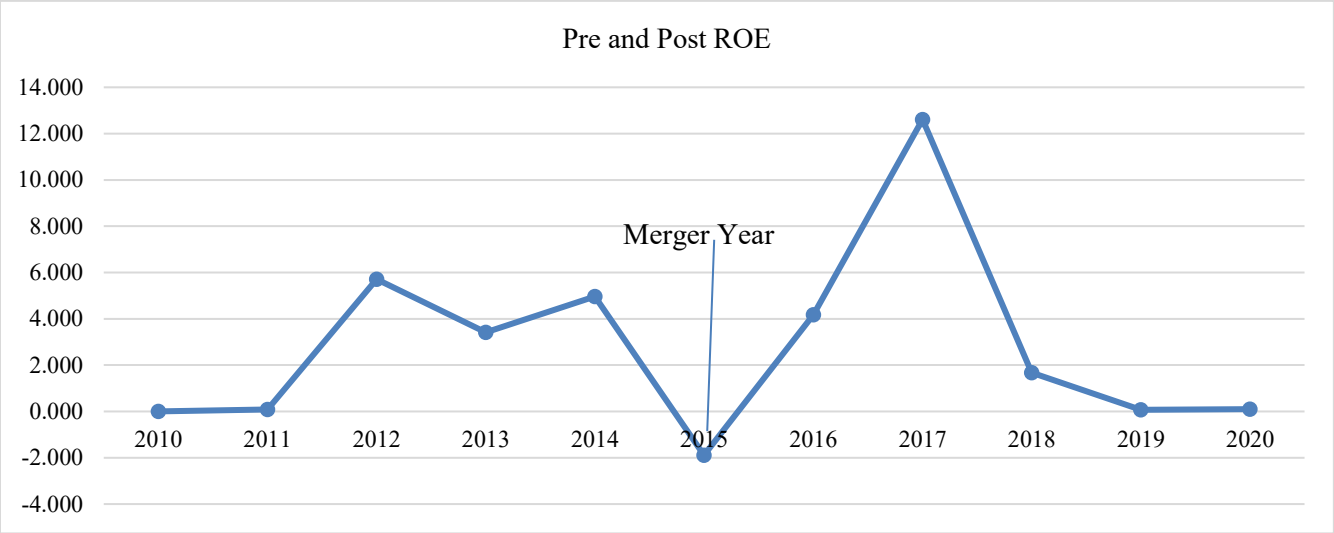


Figure 33: Pre and Post Return on Equity of Bank Islami Pakistan Limited (BIPL)

The below figure indicates the performance of BIPL in pre and post-context. It is very clear that NIM fluctuated from 2010 to 2015 but stabilized after the merger in 2016.

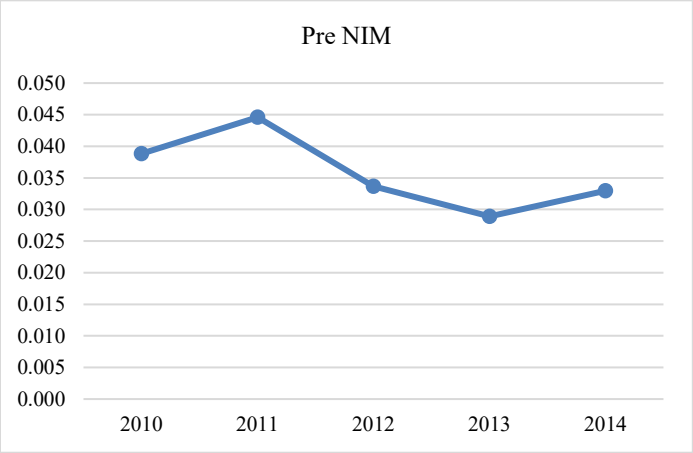


Figure 34: Pre NIM of BIPL

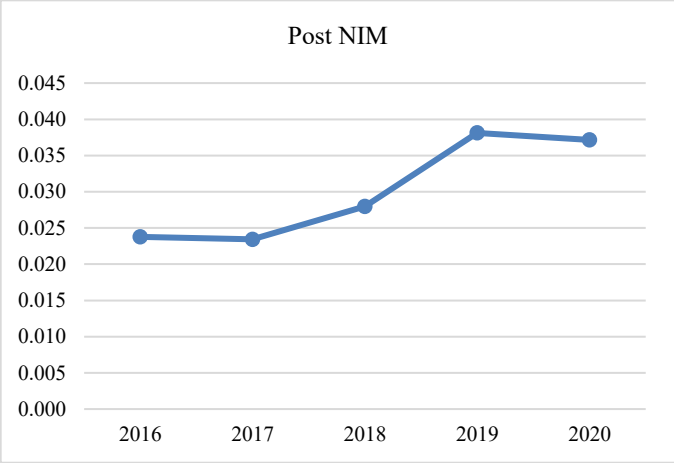


Figure 35: Post NIM of BIPL

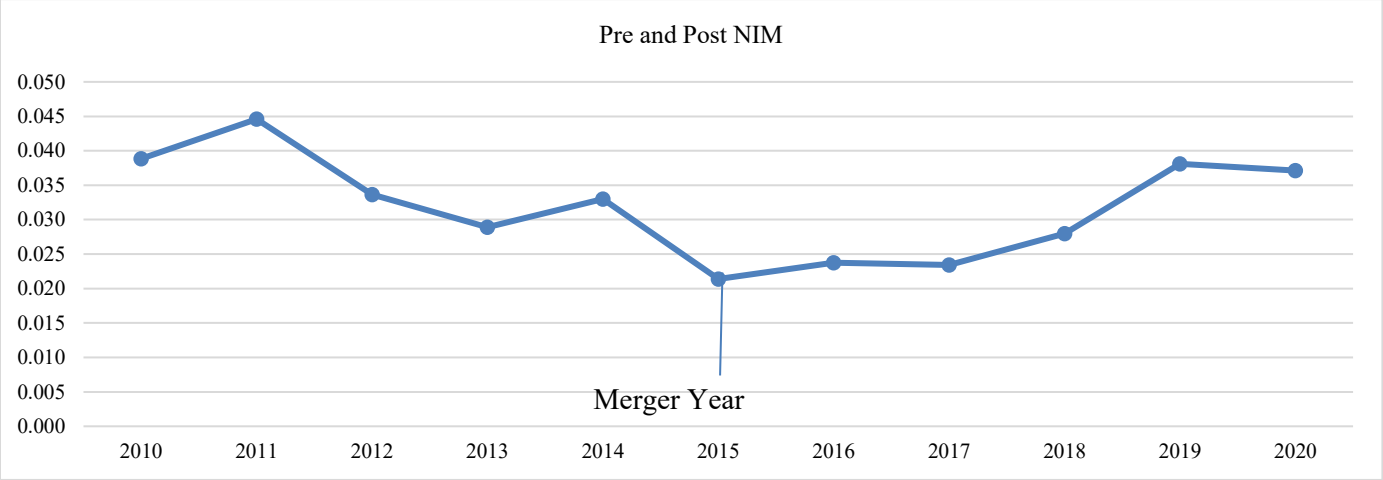


Figure 36: Pre and Post Net Interest Margin of Bank Islami Pakistan Limited (BIPL)

Table 8
Paired Samples t-test of the Bank Islami Pakistan Limited (BIPL)

Bank Islami Pakistan Limited Paired Samples T-Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Dev.	Std. Error Mean	95% Confid. Interval of the Diff. Lower	Upper			
Pair 1	ROA Pre – ROA Post	-0.02	0.449	0.201	-0.582	0.534	-0.12	4	0.91
Pair 2	ROE Pre – ROE Post	-0.89	7.443	3.329	-10.14	8.35	-0.268	4	0.8
Pair 3	NIM Pre – NIM Post	0.06	0.0128	0.005	-0.009	0.021	1.043	4	0.35
Pair 4	CETA Pre – CETA Post	0.665	6.209	2.776	-7.043	8.375	0.24	4	0.82
Pair 5	ITA Pre – ITA Post	8.494	28.455	12.725	-26.84	43.83	0.668	4	0.54
Pair 6	DE Pre – DE Post	-4.63	1.898	0.848	-6.99	-2.276	-5.459	4	0.00***
Pair 7	CAR Pre – CAR Post	0.5	5.992	2.679	-6.94	7.94	0.187	4	0.86
Pair 8	TLTDO Pre – TLTDO Post	-0.06	0.025	0.011	-0.092	-0.028	-5.215	4	0.00***
Pair 9	NPL Pre – NPL Post	-0.06	0.01	0.004	-0.068	-0.042	-11.63	4	0.00***
Pair 10	EPS Pre – EPS Post	-0.48	0.535	0.239	-1.145	0.185	-2.004	4	0.11
Pair 11	MPS Pre – MPS Post	-5.12	2.981	1.333	-8.822	-1.417	-3.84	4	0.01**

(*) Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1%

Table 9
Comparison of financial ratios of Bank Islami Pakistan Limited (BIPL)

Sr.#	Ratios	Average Pre	Average Post	Change	Relative Change
1	ROA	0.191	0.215	0.024	12.62
2	ROE	2.835	3.728	0.892	31.479
3	NIM	0.035	0.03	-0.005	-15.952
4	CETA	4.357	3.692	-0.665	-15.276
5	ITA	21.132	12.637	-8.494	-40.197
6	DE	12.225	16.859	4.633	37.896
7	CAR	4.018	3.518	-0.499	-12.439
8	TLTDO	1.061	1.121	0.06	5.66
9	NPL	0.015	0.07	0.055	361.281
10	EPS	0.472	0.952	0.48	101.694
11	MPS	6.37	11.49	5.12	80.376
12	DPS	0.000	0.000	0.000	0.000

Using a paired samples t-test, this research. The above table compares pre- and post-period averages to identify significant changes. DE ratio, which increased by 4.633 (37.90%) with a significant ($p < 0.01$), suggesting a shift toward higher debt and increased financial leverage. TLTDO ratio increased by 0.060 (5.66%), also significant ($p < 0.01$), indicating a shift toward aggressive lending practices. NPL ratio increase of 0.055 (361.28%) with significant ($p <0 .01$), reflecting deteriorating asset quality and heightened credit risk. MPS increase by 5.120 (80.38%) with significance ($p < 0.05$), highlighting positive market sentiment and investor confidence. DPS remained unchanged, indicating stability in dividend policy. This analysis reveals critical changes in DE, TLTDO, NPL, and MPS ratios, and mentions areas of both concern and progress. It underscores the importance of considering statistical significance alongside practical relevance to fully understand the bank's financial health and strategic trajectory.

The pre-merger correlation matrix highlights key relationships between financial ratios, with significant correlations at the $p < 0.05$ at $p < 0.01$ levels. ROA has significant positive correlation with CETA, ITA, DE, CAR and has negative significant correlation with NPL and DPS. ROE has significant positive correlation with CETA, ITA, DE, CAR and has negative significant correlation with MPS and DPS. NIM has significant positive correlation with ITA, CAR, TLTDO, EPS, MPS, DPS and has negative significant correlation with DE, and NPL.

The post-merger correlation matrix highlights key relationships between financial ratios, with significant correlations at the $p < 0.05$ at $p < 0.01$ levels. ROA has significant positive correlation with CETA, DE, CAR and has negative significant correlation with TLTDO, NPL and

DPS. ROE has significant positive correlation with CETA, DE, CAR and has negative significant correlation with TLTDO, NPL and DPS. NIM has significant positive correlation with EPS, MPS, DPS and has negative significant correlation with DE and CAR.

Table 10
Merger Correlation

Pre-Merger Correlation												
	ROA	**ROE**	**NIM**	**CTA**	**ITA**	**DE**	**CAR**	**TLTDO**	**NPL**	**EPS**	**MPS**	**DPS**
ROA	1											
ROE	0.91**	1										
NIM	0.13	-0.02	1									
CETA	0.72**	0.72**	0.14	1								
ITA	0.58*	0.55*	0.29*	0.92**	1							
DE	0.73**	0.80**	-0.43*	0.06	0.37*	1						
CAR	0.38*	0.32*	0.32*	0.86**	0.94**	0.19	1					
TLTDO	-0.08	-0.16	0.53*	0.11	0.37*	-0.45*	0.46*	1				
NPL	-0.37*	-0.12	-0.67**	-0.46*	-0.44*	-0.04	-0.50*	-0.09	1			
EPS	-0.05	-0.15	0.75**	0.06	0.25*	-0.56*	0.34*	0.83**	-0.28*	1		
MPS	-0.14	-0.24*	0.71**	-0.02	0.14	-0.62**	0.24*	0.77**	-0.26*	0.98**	1	
DPS	-0.21*	-0.31*	0.69**	0.01	0.23*	-0.66**	0.37*	0.86**	-0.25*	0.97**	0.96**	1
Post-Merger Correlation												
	ROA	**ROE**	**NIM**	**CTA**	**ITA**	**DE**	**CAR**	**TLTDO**	**NPL**	**EPS**	**MPS**	**DPS**
ROA	1											
ROE	0.99**	1										
NIM	-0.56*	-0.52*	1									
CETA	0.59*	0.59*	-0.18	1								
ITA	0.05	0.04	0.19	0.78**	1							
DE	0.76**	0.78**	-0.41*	0.22*	-0.33*	1						
CAR	0.33*	0.30*	-0.30*	0.77**	0.67**	0.00	1					
TLTDO	-0.23*	-0.22*	0.01	-0.37*	-0.29*	0.00	-0.31*	1				
NPL	-0.49*	-0.56*	-0.18	-0.48*	-0.24*	-0.31*	-0.12	0.12	1			
EPS	-0.10	-0.08	0.44*	0.39*	0.64**	-0.44*	0.25*	-0.24*	-0.54*	1		
MPS	-0.14	-0.12	0.46*	0.49*	0.78**	-0.50*	0.44*	-0.26*	-0.48*	0.95**	1	
DPS	-0.26*	-0.25*	0.29*	-0.02	0.20	-0.47*	-0.02	-0.15	-0.31*	0.83**	0.69**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

In pre-merger model, R Square of 0.931 reveals that 93.1% of the dependent variable's is explained, by the independent variable and F-Significance is $p < 0.01$ indicate the fitness of model. The Adjusted R Square, at 0.816, accounts for the number of predictors and still reflects high explanatory power, despite being lower than R Square. A standard error of 0.226 suggests moderate precision, with predictions reasonably close to actual values, though less precise than in the post-merger model. CETA (0.319) show a positive relationship significant ($p < 0.10$). CAR (-0.322) demonstrates a negative relationship significance ($p < 0.10$). NPL (-15.059) indicates a negative association, and significant ($p < 0.10$). Overall, the model shows a good fit, as reflected in R Square (0.931) and Adjusted R Square (0.816). Although certain predictors like CETA, CAR and NPL approach significance, others, such as NIM, do not significantly impact the dependent variable in this model.

In post-merger model, R Square of 0.975 reveals that 97.5% of the dependent variable's is explained, by the independent variable and F-Significance is $p < 0.01$ indicating the fitness of the model. The Adjusted R Square, at 0.932, accounts for predictor count, providing a refined measure of model fit for multiple regression and confirming high explanatory power despite a minor reduction from R Square.

Table 11
Merger Regression Analysis

Pre-Merger Regression Statistics				Post-Merger Regression Statistics		
Variables	**Coefficients**	**t Stat**	**P-value**	**Coefficients**	**t Stat**	**P-value**
Intercept	-5.416	-1.467	0.193	0.848	2.349	0.057
NIM	-22.259	-0.963	0.373	-16.036	-1.041	0.338
CETA	0.319	1.997	0.093*	-0.046	-1.078	0.322
ITA	0.005	0.33	0.753	-0.008	-0.654	0.537
DE	-0.052	-0.743	0.485	-0.005	-0.265	0.8
CAR	-0.322	-2.318	0.06*	0.138	2.601	0.041**
TLTDO	6.7	1.713	0.138	-0.011	-2.081	0.083*
NPL	-15.059	-1.959	0.098*	-3.611	-0.663	0.532
EPS	0.096	1.452	0.197	0.245	4.46	0.004***
MPS	-0.009	-1.456	0.196	-0.022	-2.844	0.029**
DPS	0.065	0.108	0.917	-0.21	-4.033	0.007***
R Square			0.931			0.975
Adjusted R Square			0.816			0.932
Standard Error			0.226			0.093
F Statistic			8.097			22.991
Significance F			0.009***			0.001***

(*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1%

The Standard Error of 0.093 signifies a minimal average deviation of observed values from the regression line, illustrating the model's precision in predicting actual values. CAR (0.138) shows a positive relationship and significance ($p < 0.05$). TLTDO (-0.011) indicates a negative relationship and significant ($p < 0.10$). EPS (0.245) shows a positive relationship and significant ($p < 0.01$). MPS (-0.022) indicates a negative relationship and significant ($p < 0.05$) and DPS (0.210) shows a positive relationship and significant ($p < 0.01$) emerge as significant predictors with notable impacts on the dependent variable. The coefficient for CAR suggests that a 1% increase corresponds to a 0.138 unit increase in the dependent variable, holding other factors constant. Similarly, EPS and other variables significantly contribute to the model, enhancing the dependent variable. In model, R Square (0.975) and Adjusted R Square (0.932) values confirm an excellent fit, while predictors such as CAR, TLTDO, EPS, MPS, and DPS significantly influence the dependent variable.

4.1. Discussion

MBL significant ($p < 0.05$) findings were observed in DE, CAR, NPL, EPS, and MPS the same as were also reported by Abbas et al. (2014); Adhikari et al. (2023); Shrestha, Thapa, and Phuyal (2018); Singh et al. (2023). Conversely, MBL showed insignificant ($p > 0.05$) results in ROA, ROE, NIM, CETA, ITA, TLTDO, and DPS this result was also supported by Abbas et al. (2014); Abdulwahab and Ganguli (2017); Al-Hroot et al. (2020). MCB the significant ($p < 0.05$) findings were observed in ROA, NIM, DE, NPL, and MPS this result was also supported by Al-Hroot et al. (2020); Lai (2015); Singh et al. (2023). Conversely, MCB showed insignificant ($p > 0.05$) results in ROE, CCET, ITA, CAR, TLTDO, EPS, and DPS this result was also demonstrated by Abbas et al. (2014); Abdulwahab and Ganguli (2017); Adhikari et al. (2023); Al-Hroot et al. (2020); Shah and Khan (2017); Singh et al. (2023). ABPL the significant ($p < 0.05$) findings were observed in NIM, DE, CAR, MPS, and DPS this finding is equivalent to the outcome of (Adhikari et al., 2023; Lai, 2015; Shah & Khan, 2017; Shrestha et al., 2018; Singh et al., 2023). Conversely, ABPL showed insignificant ($p > 0.05$) results by ROA, ROE, CETA, ITA, TLTDO, NPL, and EPS in the same outcome explained (Adhikari et al., 2023; Fatima & Shehzad, 2014; Sari et al., 2023) BIPL the significant ($p < 0.05$) findings were observed in DE, TLTDO, NPL, and MPS the finding was similar to the result of(Adhikari et al., 2023; Shah & Khan, 2017; Shrestha et al., 2018; Singh et al., 2023). Conversely, BIPL showed insignificant ($p > 0.05$) ROA, ROE, NIM, CETA, ITA, CAR, EPS, and DPS results were also supported by Abdulwahab and Ganguli (2017); Bhatta (2016); Fatima and Shehzad (2014); Shah and Khan (2017); Singh et al. (2023). The analysis of financial variables across MBL, MCB, ABPL, and BIPL reveals significant differences in several key metrics. Using paired

sample t-tests, notable disparities were observed in Return on Asset, Net Interest Margin, Debt to Equity, and Non-performing Loans to Total Loans, among others that the result is not significant ($p > 0.05$). This result is the outcome of (Abbas et al., 2014; Adhikari et al., 2023; Singh et al., 2023). For some variables, such as Capital Adequacy Ratio, Total loan to Total deposit, Earnings per Share, Market Price per Share, and Dividend per Share, both paired sample t-tests and regression analyses were employed, indicating more complex relationships that resulted in significant ($p < 0.05$). The finding was similar to the result of (Abbas et al., 2014; Adhikari et al., 2023; Shrestha et al., 2018; Singh et al., 2023).

5. Conclusion

This study examines the impact of mergers and acquisitions (M&A) on the performance of banks in Pakistan, focusing on pre- and post-merger periods from 2005 to 2022. Employing a quantitative approach, the study used data panels, paired t-tests, correlation, and regression analysis to assess financial performance across Meezan Bank Limited (MBL), Muslim Commercial Bank (MCB), Al Baraka Limited (ABPL), and Bank Islami Pakistan Limited (BIPL). The study critical financial determinants influencing M&A outcomes. Debt to Equity (DE) and Capital Adequacy Ratio (CAR) are significant indicators of post-merger stability, highlighting debt reliance and capital adequacy. Market-oriented metrics, such as Market Price Per Share (MPS) and Earnings Per Share (EPS), showed substantial shifts, underscoring their role in assessing shareholder profitability and market perception. Asset quality, measured by Non-Performing Loans (NPL), signals potential post-merger risks, while Total Loan to Total Deposit (TLTDO) and Dividend Per Share (DPS) offer insights into lending strategies and shareholder returns, respectively. Comparison across MBL, MCB, ABPL, and BIPL reveals notable differences in key metrics. Paired sample t-tests identified disparities in ROA, Net Interest Margin, DE, TLTDO, and NPL, underscoring each bank's unique financial profile. More complex variables Capital Adequacy, EPS, MPS, and DPS required both t-tests and regression analysis, indicating intricate relationships. Overall, the study provides a framework for evaluating M&A outcomes in Pakistan’s banking sector, highlighting areas for improvement and suggesting future research to unravel the complexities of certain financial metrics. By addressing these disparities, banks can enhance stability and competitiveness.

This study utilizes a selected sample size, focusing exclusively on the commercial banking sector. It covers only the Pakistani banking sector, examining a specific sector with selected banks. The limitation of this study is the reliance on publicly available financial data, which may not capture all relevant aspects of the banks' performance. The study focuses on a specific period, potentially missing the long-term effects of M&A. The selection of banks may not represent the entire banking sector in Pakistan, limiting the generalizability of the findings. Furthermore, the study primarily used quantitative data, possibly overlooking qualitative factors such as management changes or market sentiment. The impact of external economic conditions is also not fully accounted for, which could influence the financial performance. It enhances the comprehension of the impact of M&A on the financial performance of banks in Pakistan, and it is recommended that the study period be extended to capture long-term effects accurately. Incorporating a larger sample size of banks would improve the generalizability of the findings. Utilizing a mixed-method approach, combining quantitative data with qualitative insights from interviews with key stakeholders, can provide a more comprehensive view. Considering external economic factors and geopolitical influences in the analysis will offer a deeper understanding of the context. Future research should also explore the role of changes in management and strategy post-M&A to isolate their effects on financial performance in a better manner further the impact of post-merger transactions can be seen through the market performance ratios and it is necessary to look at how supporting financial structure for future merger and restructuring.

Future research can pursue several directions to enhance the robustness and generalizability of findings. Different periods will help capture both the short-term and long-

term effects of M&A activities. Extending the study to various sectors beyond banking will provide a broader understanding of M&A impacts across industries. Varying sample sizes can ensure that the results are more representative and not biased by sample size. Employing different financial ratios relevant to each sector will offer a more nuanced financial performance analysis. Conducting similar studies in various countries worldwide can provide comparative insights and identify global trends. Lastly, increasing the number of variables considered, such as customer satisfaction, employee retention, and market share, can provide a more comprehensive picture of M&A outcomes.

Authors' Contribution

Muhammad Fahad: Write up of introduction and review, data collection, graphs and editing.
Kashif Hamid: Data Analysis and interpretation.
Maryam Aslam: References
Muhammad Yasir Saeed: Discussion and Conclusion.
Yawar Abbas: Proof Reading and Editing

Conflict of Interests/Disclosures

The authors declared no potential conflict of interest w.r.t the research, authorship and/or publication of this article.

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