Bulletin of Business and Economics, 13(2), 898-907
https://bbejournal.com
https://doi.org/10.61506/01.00406

Empirical Study to Evaluate Financial Fitness of Listed Commercial Banks of Pakistan

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Abstract
The main purpose of this research is to find the effect of financial fraud, bank size, liquidity, solvency, and efficiency on the financial performance of selected Pakistani commercial banking sector. This research is conducted for assessing the financial stability of the commercial Banking sector of Pakistan. In this research, the ratio analysis technique is adopted for investigating the financial performance of the Banking Sector for the period 2012 to 2018. This study found that bank size, financial fraud, efficiency, solvency and liquidity have a significant impact on the financial performance of commercial banks in Pakistan**.** This research suggested that commercial banking zone working in Pakistan should be brought into being place fraud discernment appliance by framing up a well-organized and systematic, well-established, and reliable and operating fraud detection sub-division to supervise all the transactions that are contemplated vulnerable to fraudulent practices to minimization vice for them to maximization of profits for better monetary/financial progress/performance.
Keywords: Liquidity, Cash ratio, Current ratio, Efficiency, Financial Fraud, Financial performance

1. Introduction

One of the most viable sectors which take part in a national economic circle is the banking sector. Banking sector consists of public and private banks. The sector at which the majority of shares are owned by private shareholders except for the government, is called as the private sector banks (Anjum & Tiwari, 2012). The banking sector in Pakistan is regulated by the Government of Pakistan through State Bank of the Pakistan through issuing new licenses that develop a new private banking sector in the country (Naqvi, 2018). The State Bank of Pakistan (SBP) controls and supervises the financial industry to ensure stability, security, and the protection of depositors' interests. The safety, regulatory, and control measures implemented by the SBP are essential for maintaining the integrity of the financial system (State Bank of Pakistan, 2024). The SBP defines and upholds sensible criteria for commercial banks. Aside from liquidity, sufficient capital, effective risk management, and the maintenance of asset quality are also crucial (State Bank of Pakistan, 2024a). The SBP enforces these policies to ensure the financial soundness of institutions. The SBP prioritizes the funds of its depositors. If a bank fails, the Deposit Protection Corporation (DPC), which the SBP oversees, compensates depositors for a predetermined sum of money. Depositors are safeguarded, and the financial system's reputation for trust is improved.

According to Farhan et al. (2020), banks are obligated to establish and maintain efficient risk management systems that are capable of identifying, assessing, and reducing credit, market, and operational risks. The implementation of this approach has elevated the level of security and stability within the financial sector. By supervising liquidity management, the SBP guarantees that financial institutions have adequate liquid assets to fulfil their immediate financial commitments. The likelihood of a liquidity crisis transpiring is diminished as a result of the financial sector's stabilization. Commercial banks are subject to inspections and audits conducted by the SBP in order to evaluate their risk management, regulatory compliance, and overall financial well-being (Farooq et al., 2020). These audits identify and rectify any prospective issues expeditiously. The SBP enforces capital adequacy regulations to guarantee that financial institutions maintain sufficient capital to efficiently mitigate potential losses. By implementing this approach, financial institutions are able to recover from unfavorable circumstances while safeguarding the interests of depositors and other relevant stakeholders. In the banking sector, corporate governance policies have been implemented and are being enforced by the SBP (Wali, 2018; Jan et al., 2021).

By encouraging transparent and accountable decision-making, these regulations protect shareholders and depositors. To mitigate the occurrence of illicit financial activities, the SBP has mandated that financial institutions adopt robust counter-terrorism funding and anti-money laundering measures. This technological advancement enhances the security of the banking system in a manner that satisfies international standards. The regulatory and control procedures of the SBP demonstrate flexibility and promptness in response to a range of risks, evolving economic circumstances, and global regulatory benchmarks (Jan & Muhammad, 2020). The stability and security of the financial environment in Pakistan are primarily attributable to the SBP's safeguarding, regulating, and monitoring of deposits. The SBP is entrusted with the responsibility of safeguarding depositors' funds in Pakistan (The Express Tribune, 2023; Deposit Protection Corporation, 2024; Desk, 2023). The DPC, a subsidiary of the SBP, safeguards depositor funds in the case of bank failures (Deposit Protection Corporation, 2024). Presently, the Deposit Security Act of 2016 ensures complete security for 94% of depositors, guaranteeing the protection of their funds up to Rs 500,000 (The Express Tribune, 2023; Desk, 2023). Economic reforms, transformational reforms, and financial reforms construct the profitable concern for private banks (Ali et al., 2011). The growth and financial success of private banks are contingent upon economic, structural, and financial modifications. However, the SBP has just issued a clarification regarding constitutionally safeguarded deposits, which has generated worries regarding public safety. Accounts having a balance over PKR 0.5 million may give rise to concerns, as the DPC primarily focuses on protecting deposits up to this level (Ahmed, 2023). Compensation guarantees do not apply to deposits exceeding PKR 0.5 million. Account holders may potentially experience disparate treatment due to the inequitable safeguards provided to depositors. According to the SBP, 94% of account holders have balances of PKR 0.5 million or less, whereas 6% of the population have deposits over PKR 0.5 million.

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Imposing severe restrictions on protection could jeopardize a significant number of depositors in the event of a bank failure, so compromising overall security and financial inclusivity (Omri, 2022; Ahmed, 2023). The level of trust and belief that the general public has in a bank plays a crucial role in assessing its stability (Barkhordari et al., 2017). Adhering strictly to legal regulations can lead to the seizure of funds, a decrease in depositor trust, and a negative public view of financial institutions. Consequently, adverse outcomes may arise in the financial industry. According to Ahmed (2023), the DPC follows international standards and offers insurance coverage of up to PKR 0.5 million. However, it falls short in terms of safety compared to other countries. Inconsistency within the banking sector can hinder its growth and diminish its attractiveness to potential investors, both domestic and international. It is crucial to evaluate the possible consequences of setting a certain limit for legal protection on how depositors perceive the risks associated with investment opportunities. Depositors can choose to utilise more reliable financial products or investment strategies in order to protect their capital. These procedures have the potential to impact the stability and liquidity of banks. The SBP deputy governor's cautionary statement about the limited legal protection of only PKR 0.5 million exacerbates these issues, making them more urgent (Paracha, 2023). This emphasises the importance of thoroughly assessing deposit protection plans to ensure their compliance with international standards and the dynamic financial industry landscape.

To summarize, although private banks necessitate financial and economic restructuring, issues over deposit protection pose a threat to public safety. In order for the banking sector in Pakistan to thrive, it is essential that depositor funds and sound financial procedures coexist harmoniously. The spread of globalization brings up numerous changes in the global economic and business landscape. Pakistan is no exception to these changes, and practically all industries, including the financial sector, are affected in some way. As a result, the banking sector in Pakistan is becoming increasingly competitive (Rehman & Ahmed, 2008). In light of the prevailing global economic conditions and the intensifying competition within the banking industry, the statement made by the SBP regarding the legal safeguarding of bank deposits holds considerable importance. The significance of accountability and transparency in the financial sector has increased as a result of globalization. The transparency of the SBP's announcement concerning the legal protection limit for bank deposits is exemplified through its assurance to depositors of the funds' safety (Jafri, 2023; Shahbaz, 2018). Transparency enhances the credibility and accountability of the financial sector in accordance with global norms.

Additionally, the financial sector is affected by globalization. In effect, comprehensive legal protections reduce risk. By clarifying these restrictions, the SBP contributes to the preservation of the financial system's stability. Efficient risk management strategies are imperative for financial institutions to maintain stability and attract investments in a fiercely competitive market. Banks have the ability to distinguish themselves and gain the confidence of depositors by utilizing regulatory compliance. To appeal to customers in a fiercely competitive industry, financial institutions might opt to offer supplementary amenities or enhance their security protocols. Enhanced competition could potentially yield advantages for financial products and services (Rehman et al., 2019).

As a consequence of globalization, governments are compelled to adopt and enforce international best practices in order to boost the competitiveness and productivity of their respective industries. The deposit protection guidelines established by regulatory bodies in accordance with international standards are adhered to in the SBP's statement. Enhancing the global consistency of Pakistan's financial system is the objective of this undertaking. The primary reliance of any banking institution engaged in the international financial system is the trust and confidence of its customers. It is critical to furnish SBP with adequate information concerning the legal protection limit in order to establish and maintain consumer confidence. By disclosing the safeguards in place to protect depositors, the SBP fosters competition. To retain customers (Jan & Muhammad, 2020), banks must improve their security and service standards.

The financial industry is subject to legislation and regulations that are influenced by the processes of globalization. As stated by Ehsan et al. (2019), the degree to which the SBP demonstrates adherence to global banking standards is reflected in its disclosure. In light of the statement, Pakistan's banking industry must adapt to global developments so as to maintain its competitiveness. Given the context of globalization and the intense competition within Pakistan's banking industry, the SBP's recent declaration concerning the legal safeguarding of bank deposits is significant. The implementation of international banking standards within the nation's banking sector contributes to the improvement of transparency, consumer confidence, and financial stability. Consequently, competition and influence in the financial sector increase.

Many scholars from numerous countries have investigated the performance of commercial banks. The performance of Islamic and conventional banks is analyzed in order to determine the effectiveness of the banking system (Pinto et al., 2017; Audi & Masri, 2024). The banking system offers a diverse range of products and services, linking the system with nearly every area of the economy, directly or indirectly (Ahmad et al., 2022). Banking dominates the financial sector in the region, but non-bank institutions of finance and equity markets are underdeveloped (Abuzayed et al., 2018). Fraud is uncontrolled in mature developed and developing countries and happened in these countries differently Bank fraud especially through ATM skimming in Pakistan has increased and will continue to increase especially last year 2018 (Tariq, 2018). Banks may well behave differently in lending to firms according to their funding structure, particularly during a liquidity shock crisis (Jung & Kim, 2015). In developed countries, efficiency research has focused on the effects of market structure and concentration, deregulation, mergers and acquisitions, and foreign bank entry on performance (Jiang et al., 2009). The effect of unstructured institutional components on both investors' and enterprises' financial decisions has been extensively studied in the literature (Jin et al., 2019).

The performance of commercial banks is assessed by international specialists, making it a global issue. Pakistan's commercial banks are distinct and require particular consideration. The financial infrastructure of Pakistan is composed of various components. The investigation is made more difficult by Pakistan's combination of conventional and Islamic banking organizations. In order to assess the banking industry, Pinto et al. (2017) looked at both kinds of banks. This dual banking system, which is uncommon worldwide, makes financial performance more difficult. Limitations on bank savings protection have been announced by the State Bank of Pakistan (SBP). This declaration explains how depositors are safeguarded by regulations. These enhancements increase the research's applicability by allowing an analysis of the regulatory framework and how it affects banking and public trust. A unique

financial environment is created in the banking-dominated region by the underdevelopment of stock markets and non-bank financial institutions (Abuzayed et al., 2018). The ways in which commercial banks handle their hegemony and engage with other financial organizations might shed light on the dynamics of the local economy.

For Pakistan's financial system, unregulated fraudulent operations like ATM skimming are a big threat. The latest disclosures indicate a rise in fraudulent activities and possibly inadequate regulatory oversight, underscoring the necessity of comprehensive evaluations and addressing vulnerabilities inside the financial system. Pakistan has different regulations and economic policies than wealthy countries. Bank operations are impacted by institutional quality, political stability, and regulatory efficacy. Accordingly, Jin et al. (2019) recommend examining Pakistan's unstructured institutional characteristics in order to comprehend the special opportunities and problems that the banking sector faces. The study conducted by Jung and Kim (2015) on bank behaviour in liquidity shock situations has implications for financial crises and the global economy. Policymakers and industry stakeholders can learn from Pakistani banks' responses to liquidity shocks and whether or not their lending practices differ depending on the type of funding. While scholarly study in wealthier countries has concentrated on market structure and concentration, efficiency research in Pakistan is essential as well (Jiang et al., 2009). Policy decisions and the performance of the banking sector in Pakistan's distinct regulatory and economic environment are reliant on bank performance.

International studies are generally ignored in Pakistani commercial bank analysis. Policymakers, regulators, and industry participants need to consider the research because of Pakistan's particular conditions, which include the dual banking system, recent regulatory disclosures, fraud prevention issues, and banking's dominance in the financial sector. In this context, the results can assist banks in developing sustainable strategies that work. Additionally, it is assumed that the study will enable new researchers to understand the difference between both public and private sector banks' financial performance. This research considers commercial banks working in Pakistan. The financial performance of ten leading banks is analyzed using certain variables including financial fraud, bank size, liquidity, solvency and efficiency. The assertion made by the State Bank of Pakistan (SBP) that bank deposits, up to a maximum of 0.5 million, are not legally protected has increased the credibility and significance of our analysis. This disclosure distinguishes our analysis of the financial performance of private and public institutions as it is current and exclusive.

Using regulatory disclosure as a moderating variable, our study investigates the effect of recent deposit protection regulations on the financial performance of public and private sector banks in Pakistan. Through an analysis of the effects of recent regulatory modifications on the financial activities of the banking sector, our methodology enriches our investigation and effectively addresses a substantial void in the existing body of literature. This research enriches the academic literature and provides regulators, policymakers, and industry stakeholders with valuable insights regarding the dynamic banking environment in Pakistan. In this research, the liquidity approach is used which helps the Banks' capability to satisfy its concise term responsibility. This helps in measuring of the bank's overall financial position under uncertain conditions such as limited customer safety up to PKR 0.5 million. Other significant indicators of performance analysis are activity/efficiency measures (Paracha, 2023).

We assess banks' capacity to fulfill immediate financial obligations by employing a liquidity-based methodology, which is a significant financial indicator. The recent enforcement by the SBP of a limit of PKR 0.5 million on customer protection highlights the significance of this matter, especially in times of unpredictability (Paracha, 2023). The liquidity ratio is a crucial metric used to evaluate the capacity of banks to withstand financial instability (Bai et al., 2018; Sironi, 2018). Due to recent regulatory developments, it offers a distinct viewpoint. The study utilizes key performance indicators such as activity and efficiency to quantify the speed at which accounts are transformed into cash and income. Precise financial metrics are crucial for assessing the effectiveness of banks in generating revenue and managing cash flow.

Patin et al. (2020) incorporate measurements such as average collection time and total assets turnover in performance analysis due to their significance. The average debtors or average collection period, often referred to as average collection time, is a significant indicator to consider when evaluating credit and collection patterns. Having a thorough understanding of credit intricacies and effective collection methods is crucial, particularly in light of the latest revelation that limits customer collateral security to PKR 0.5 million. Reducing risks and ensuring financial stability have a direct impact on a financial company. Efficiently utilizing assets to enhance financial performance is a vital measure for the banking sector (Khalifaturofi'ah, 2023; Uslu, 2022). It is crucial to emphasize that comparable international studies have been conducted, confirming the importance of these financial performance indicators on a global level. The study's value is mostly derived from its contextual implementation inside the distinctive conditions and regulatory advancements of Pakistan's commercial banking industry. The importance of our research has been enhanced due to the local banking sector and subsequent regulatory advancements.

This study is significant since it delves into unexplored aspects of Pakistan's ever-changing commercial banking sector, specifically in light of the State Bank of Pakistan's recent declaration of a consumer safety limit of PKR 0.5 million. To address the lack of understanding about how recent regulatory changes affect the efficiency, stability, and financial well-being of banks, we employ a method that focuses on liquidity and key performance indicators, such as average collection time and total assets turnover. This enhances the discussion on global financial performance analysis and addresses a significant lack of understanding regarding these impacts. The relevance of our research is heightened due to the specific contextual suitability of these indicators in Pakistani settings. This offers valuable insights to industry stakeholders, regulators, and policymakers, enabling them to effectively navigate the evolving banking environment in the region. This ratio analysis study provides a comprehensive evaluation of the financial performance of the banking sector. We utilize this methodology to evaluate the financial soundness, reliability, and efficiency of Pakistan's commercial banks, providing valuable information to professionals and scholars.

2. Literature Review

Researchers have diligently endeavored to comprehend the financial efficacy of international banks through the examination of banking systems (Omete, 2023). The recent regulatory change in Pakistan, implemented by the SBP, is the imposition of a customer

safety limit of PKR 0.5 million. This has sparked renewed interest in the stability, effectiveness, and financial well-being of both public and private sector banks. Pinto et al. (2017) examine the efficiency of both conventional and Islamic banks in Pakistan in order to gain a more comprehensive picture of the banking industry.

Analysts place a high importance on liquidity when assessing the short-term capabilities of banks, especially in times of uncertainty (Chen et al. 2023). The banking industry is currently experiencing concerns regarding the security of deposits due to the recent announcement made by the SBP (Jafri, 2023). The banking system offers a diverse array of products and services, and Ahmad et al. (2022) elucidate its pervasive connection to nearly every firm, whether through direct or indirect means. This study examines the importance of evaluating banks' capacity to transform accounts into revenue and cash, a matter that is thoroughly investigated. Efficiency ratios are crucial indicators of banks' ability to generate revenue from their assets, manage credit and collection activities, optimize total assets turnover, and minimize average collection time (Openstax, 2024). Jin et al. (2019) highlights the importance of comprehending the regulatory and economic context of a particular location when examining how unstructured institutional components affect financial decision-making. The scope of our research is centered on the unique circumstances of Pakistan, necessitating a comprehensive examination of financial performance in response to recent regulatory modifications.

The study conducted by Jiang et al. (2009) enhances our comprehension of the Pakistani banking system by examining global studies on market structure, concentration, and banking efficacy. The prevalence of banking in the local financial industry, along with the sluggish growth of non-bank institutions and stock markets, presents an opportunity to examine the impact of these characteristics on the effectiveness and stability of banks and the whole financial system (Abuzayed et al., 2018). The existing literature offers valuable understanding of the worldwide financial performance of banks. The motivating factors behind this research are Pakistan's distinct attributes, recent changes in regulations, and focus on ways to enhance efficiency. This study provides a comprehensive overview of the intricate financial challenges encountered by public and private sector banks in Pakistan by building upon previous research and tailoring it to the local context.

Meanwhile they (who are they?) indicate that there exist an economically important and significant negative association linking the "equity market" activities' inflation, and simultaneously the "banking sector development" activities' inflation. Shamsuddin et al., (2018) investigate the collision of financial fraudulence and Liquidity on financial fitness of Kenyan commercial banking sector, acquired descriptive study the debt indicates the long-term solvency of the organizations. Because long–term debt is the most concerned for financial analysis, so these indicators are used as a tool for long-term financial position. Profitability analysis is a helpful technique for estimating the performance of the banking section and other sectors. Rani and Zergaw (2017) state that profitability analysis assists management in executive resolutions regarding prospective modification in the profitable funds of the banks and companies, researchers consider profitability analysis as a dependent variable because it has an important impact on the economic execution of the banking section. Annual data comprising financial statements has been published by business firms this financial data has issued quarterly by some large companies. Accountants and authenticated analyst keep an eye on the accountants' judgment to approximate the trustworthiness of the data that has been given presently. Ghecham and Salih (2019) argues that cross-sectional time series (panel) data for 46 Gulf Cooperation Council (GCC) banks. This data presents a number of financial ratios derived from diverse financial information contained in the audited financial statements of GCC-based banks.

Mustarós et al. (2018) states that financial ratios, which compare the values of accounts in financial statements, represent an example of researchers' and professionals' interest in relative rather than absolute account magnitudes this debate is related with selection of right methodology. Kanapickienė and Grundienė (2015) states that financial ratio analysis is one of those basic approaches to detecting fraud. According to a theoretical survey, financial ratios are examined in scientific literature in order to determine which ratios of financial statements are the most sensitive in relation to the motives of executive managers and company personnel to commit fraud. Liang et al. (2016) Effective bankruptcy forecasting is essential for financial firms to make sound lending decisions. In general, the two most essential aspects influencing prediction performance are input variables (or features) such as financial ratios and prediction approaches such as statistical and machine learning techniques. While numerous related publications have presented novel prediction algorithms, very few have examined the discriminatory power of bankruptcy prediction variables.

Saunder et al. (2017) took note of while utilizing onion research methodology, researchers should have to follow outermost coat to inner most coat. These coats of onion research phases included 1. Ideology of research (in this phase three types of philosophy included those are Metaphysical, Anthropology, Cosmology, Perspective of research (in this The Inferential Plan and Explorative Plan are included), Plan of Research (which point out Exploratory, Assessment, Narrative, Activity Research), Option of research (which described Mono Technique, Mixed technique, and Multi-system technique), Time view of research (which illustrated, Random sampling (Cross-Sectional), Protensive (Longitudinal),and Scanning and assembly of Data (which describes Primary and Secondary data). Literature signifies that, with an effective ability of allocating the available financial resources are interfered by anticipated increase in the financial resources, whereas, these predictions are successfully assessed too. The next section indicates the research methodology and the data collection procedure and sample and secondary nature of the research is discussed in the succeeding section.

3. Research Methodology

3.1. Data and Sample

In this research study, data is collected from peripheral origin. In this study nature of the analysis is empirical. A panel data is used for years ranging from 2012 to 2018. In this paper, Descriptive research techniques are used. The main objective of descriptive research is a description existing at current. Secondary data have been used entirely in the study. The sample size of this paper was 10 banks from Pakistan including private and public banks. The ratio analysis technique is applied. A random sampling technique is used in this research project. Minimum 8 ratios are calculated for all 10 banks for 2013 to 2018. It made 70 observations at minimum. For analysis, data is collected from the annual financial statements of the banks for the last five FYs from FY 2012 to FY

2018. The annual statements of the banks are downloaded from the official websites of the selected commercialized banks. The annual statements of the banks are included all financial information regarding the banks and all relevant data was collected.

3.2. Variables of the Study

The basic purpose of this research is to observe the strong impact of accounting measures on financial performance. For this objective Net profit margin and return on Assets have been taken as dependent variables which are categorically classified under the head of financial performance and other independent variables are the size of the bank, financial frauds, liquidity, solvency, and efficiency.

Table 1: Variables and Measurements

Variable	Variable short Form	Measurement
Net Profit	NP	Net Profit margin = Net Profit ⁄ Total revenue x 100
Return on Assets	ROA	Return on Assets=Total Assets Net Income (Shah & Jan, 2014)
Cash Ratio	CR	Cash ratio = (Cash + Marketable Securities) / Current Liabilities (Ernayani and Sari., 2017)
Current Ratio	CCR	Current Ratio=Current liabilities Current assets (Mushtaq et el., 2014)
Receivable Turnovers	RTO	Accounts Receivable Turnover = Net Credit Sales / Average Accounts Receivable.
Total Assets Turnovers	TATO	Asset Turnover Ratio = Net Sales / Average Total Assets
Debt to Equity Ratio	DER	Debt/Equity=Total Shareholders' Equity , Total Liabilities (Hertina, D, 2021).
Total Debt Ratio	TDR	Debt ratio = Total Debt/Total assets (Michaelas., 1999)
Bank Relative Size	Size	Natural log of Total Assets (Tarawneh, M. 2006)
Financial Fraud	FF	1)Financial Fraud to Total Expense Ratio 2)Financial fraud to Total Income Ratio (Rezaee, Z. (2005)

3.3. The Econometric Model

Allowing the possibility of Panel Effects in the sample, the model depicted in Eq. (1) can be rewritten written as follows:

Model 1

$$NP_{i,t} = \alpha_i + \beta 1(RA_{i,t}) + \beta 2(CR_{i,t}) + \beta 3(CCR_{i,t}) + \beta 4(RTO_{i,t}) + \beta 5(TATO_{i,t}) + \beta 6(DER_{i,t}) + \beta 7(TDR_{i,t}) + \beta 8(SIZE_{i,t}) + \beta 9(FF_{i,t}) + \varepsilon_{i,t} \quad \ldots\ldots (3)$$

Model 2

$$ROA_{i,t} = \alpha_i + \beta 1(RA_{i,t}) + \beta 2(CR_{i,t}) + \beta 3(CCR_{i,t}) + \beta 4(RTO_{i,t}) + \beta 5(TATO_{i,t}) + \beta 6(DER_{i,t}) + \beta 7(TDR_{i,t}) + \beta 8(SIZE_{i,t}) + \beta 9(FF_{i,t}) + \varepsilon_{i,t} \quad \ldots\ldots (4)$$

4. Results and discussions

In this chapter, data analysis and interpretation are made based on data obtained from secondary sources.

4.1. Descriptive Statistics

In these analyses, NP and RA – dependent variable was used as a proxy for Net Profit and Return on Assets value, separately. On the other side, independent variables as CR, CCR, RTO, TATO, DER, TDR, Size, FF were taken as a proxy for financial performance measures. A set of descriptive analyses of these variables is here as under

Table 1: Descriptive Analysis

Variable	Mean	Std.Dev.	Min	Max
NP	0.184	0.102	-0.096	0.496
ROA	0.013	0.009	-0.008	0.041
CR	9.032	4.236	0.373	24.931
CRR	166.95	118.89	-0.029	536.84
RTO	0.184	0.054	-0.011	0.381
TATO	0.069	0.015	-0.178	0.097
DER	6.581	5.689	0.241	19.564
TDR	0.873	0.149	0.002	0.973
SIZE	0.873	0.055	0.007	0.178
FF	0.031	0.050	-0.045	0.273

Outcomes shown in above table 3 column (a) portray the benefaction to NP due to 1-unit increase in CR, RTO, TATO, AND SIZE is 0.004, 0.324, 2.501 and 0.607 units respectively. On the other hand, because 1 unit increase CCR, DER, TDR and FF decrease NP by 0.004, 0.515, 0.211and 0.762 respectively. The results depict that CCR, RTO, TDR A and are statistically significant at 0.05 % level and TATO, DER, SIZE and FF are statistically significant at 0.001% and CR is insignificant. The above table 4.3 column (b) indicates evaluation of results for econometric representation developed in equation 2. Fixed effects estimation using Fixed-

effect model. Portray the benefaction to NP due to 1-unit increase in RTO, TATO, AND SIZE is 0.574, 1.238 and 1.589 units respectively. On the other hand, because 1 unit increase CR, CCR, DER, TDR and FF decrease NP by 0.000, 0.000, 0.277, 0.056 and 0.495 respectively. The results depict that TATO is statistically significant at 0.05 % level and RTO, and FF are statistically significant at 0.001% and DER is statistically significant at 0.01 % and CR, CCR, TDR SIZE is insignificant.

Table 2: Correlation and Covariance Matrix

Corr.	NP	ROA	CR	CCR	RTO	TATO	DER	TDR	SIZE	FF
NP	1.0000									
ROA	0.949***	1.0000								
CR	-0.358***	-0.380***	1.0000							
CCR	-0.089	0.046	0.440***	1.0000						
RTO	0.090	0.072	0.019	0.030	1.0000					
TATO	0.313***	0.561***	-0.266*	0.324***	0.081	1.0000				
DER	0.006	-0.106	-0.291**	-0.531***	0.008	-0.328***	1.0000			
TDR	-0.427***	-0.583***	0.172	-0.500***	0.189	-0.597***	0.349***	1.0000		
SIZE	0.154	0.017	0.020	-0.577***	-0.0272	-0.356***	0.4111***	0.291**	1.0000	
FF	-0.374***	-0.260*	0.262*	0.195	-	-0.0018	-0.2239*	-0.1222	0.0104	1.0000

*Correlation is Significance at the 0.05 level (2-tailed), ** at the 0.01 level (2-tailed), *** at the 0.001 level (2-tailed).

Table 3: Model 1: Dependent Variable: NP

	Pooled OLS Estimation (a)	Fixed Effects Estimation (b)	Random Effects Estimation (c)	Random Effects Estimation Using Generalized Least Square Estimates (d)
Independent. Variables	Coefficient & p-value	Coefficient & p-value	Coefficient & p-value	Coefficient & p-value
CR	-0.004	-0.000	-0.003	-0.003
CCR	-0.004*	-0.000	-0.000	-0.000
RTO	0.324*	0.574***	0.513***	0.447***
TATO	2.501***	1.238*	2.187***	0.292***
DER	-0.515***	-0.277**	-0.396***	-0.418***
TDR	-0.211*	-0.056	- 0.186*	-0.021***
SIZE	0.607***	1.589	0.555*	0.625**
FF	-0.762***	-0.495***	-0.563***	-0.622***
C	0.598 ***	0.229	0.436***	0.457***
R-Square 0.516		R 0.4123	R 0.3964	R 0.4003
R-Square Adjusted 0.478		F-Statistic (9,55)	R-Adjusted	R-Adjusted 0.4657
F-Statistic (8,61) 13.62		=8.24	X (5) 45.79	X (5)R 46.88
Probability > F (0.0000)		Prob F-Statistic 0.0000	Prob>X 0.0000	Prob>X 0.0000

*Correlation is Significance at the 0.05 level (2-tailed), ** at the 0.01 level (2-tailed), *** at the 0.001 level (2-tailed).

The above table 4.3 column (c) reveals the results by using STATA when we use command of random effect GLS equation (3). Portray the benefaction to NP due to 1-unit increase in RTO, TATO, AND SIZE is 0.513, 2.187 and 0.555 units respectively. On the other hand, because 1 unit increase CR, CCR, DER, TDR and FF decrease NP by 0.003, 0.000, 0.396, 0.186 and 0.563 respectively. The results depict that TDR and SIZE is statistically significant at 0.05 % level and RTO, TATO, DER and FF are statistically significant at 0.001% and CR, CCR, is insignificant. These results in table 4.3 column (d) disclose that Portray the benefaction to NP due to 1-unit increase in RTO, TATO, and SIZE is 0.447, 0.292 and 0.625 units respectively. On the other hand, because 1 unit increase CR, CCR, DER, TDR and FF decrease NP by 0.003, 0.000, 0.418, 0.021 and 0.622 respectively. The results depict that TDR and SIZE is statistically significant at 0.05 % level and RTO, TATO, DER and FF are statistically significant at 0.001% and CR, CCR, is insignificant.

The Representation has indicated balanced estimates using pooled OLS (Fixed and Random) Effect and Generalized Least Square Projection. The indication of coefficient has remained unchanged so has statistical significance. On the whole model has also endured significant. The final model, nevertheless, looks the most acceptable since it properly deals with option of model and the contravention of OLS projections. However, the hypothesis drawn in the opening is carried by empirical analysis.

Table 4: Model 2: Dependent Variable: ROA

	Pooled OLS Estimation (a)	Fixed Effects Estimation (b)	Random Effects Estimation (c)	Random Effects Estimation Using Generalized Least Square Estimates
Independent. Variables	Coefficient & p-value	Coefficient & p-value	Coefficient & p-value	Coefficient & p-value
CR	-0.003	-0.000	-0.000	-0.000
CCR	-0.000*	-0.000	-0.000	-0.000
RTO	0.030*	0.056***	0.047***	0.047***
TATO	2.500***	0.035***	0.292***	0.292***
DER	-0.052***	-0.030***	-0.044***	-0.044***
TDR	-0.211***	-0.014*	-0.021***	-0.021***
SIZE	0.035**	0.083	0.031	0.054***
FF	-0.046**8	-0.027*	-0.033***	-0.033***
C	0.057***	0.026*	0.045***	0.045***
R-Square 0.5617		R 0.4156	R 0.3840	R 0.3840
R-Square Adjusted 0.5274		F-Statistic (9,55) =7.28	R-Adjusted	R-Adjusted 0.53756
F-Statistic (8,61) 16.40		Prob F-Statistic 0.0000	X (5) 53.17	X (5)R 53.17
Probability > F (0.0000)			Prob>X 0.0000	Prob>X 0.0000

*Correlation is Significance at the 0.05 level (2-tailed), ** at the 0.01 level (2-tailed), *** at the 0.001 level (2-tailed).

Outcomes shown in above table 4.4 column (a) portray the benefaction to ROA due to 1-unit increase in, RTO, TATO, AND SIZE is 0.030, 2.500, and 0.035 units respectively. On the other hand, because 1 unit increase CR CCR, DER, TDR and FF decrease ROA by 0.003, 0.000, 0.052, 0.211 and 0.046 respectively. The results depict that CCR and RTO are statistically significant at 0.05 % level and TATO, DER, and TDR, are statistically significant at 0.001% and SIZE, FF are statistically significant at 0.01 % level CR is insignificant. The above table 4.3 column (b) portray the benefaction to ROA due to 1-unit increase in, RTO, TATO, AND SIZE is 0.056, 0.035, and 0.083 units respectively. On the other hand, because 1 unit increase CR CCR, DER, TDR and FF decrease ROA by 0.000, 0.000, 0.030, 0.014 and 0.027 respectively. The results depict that, TDR, and FF are statistically significant at 0.05 % level and RTO, TATO, DER, are statistically significant at 0.001% and CR, CCR and SIZE is insignificant.

The above table 4.3 column (c) portray the benefaction to ROA due to 1-unit increase in, RTO, TATO, AND SIZE is 0.047, 0.292, and 0.031 units respectively. On the other hand, because 1 unit increase CR CCR, DER, TDR and FF decrease ROA by 0.000, 0.000, 0.044, 0.021 and 0.033 respectively. The results depict that, RTO, TATO, DER, TDR and FF are statistically significant at 0.001% and CR, CCR and SIZE is insignificant. These results in table 4.3 column (d) portray the benefaction to ROA due to 1-unit increase in, RTO, TATO, AND SIZE is 0.047, 0.292, and 0.054 units respectively. On the other hand, because 1 unit increase CR CCR, DER, TDR and FF decrease ROA by 0.000, 0.000, 0.044, 0.021 and 0.033 respectively. The results depict that, RTO, TATO, DER, TDR SIZE and FF are statistically significant at 0.001% and CR, and CCR is insignificant. The Representation has indicated balanced estimates using pooled OLS (Fixed and Random) Effect and Generalized Least Square Projection. The indication of coefficient has remained unchanged so has statistical significance. On the whole model has also endured significant. The final model, nevertheless, looks the most acceptable since it properly deals with option of model and the contravention of OLS projections. However, the hypothesis drawn in the opening is carried by empirical analysis.

4.2. Hausman Specification Test

It is a Statistical measure that is used to decide either we should use Fixed Effect method or whether Random Effect method for regression analysis.

H0 = Random Effect method should be used

H1 = Fixed Effect method should be used

To choose a suitable representation among various pooling panels data techniques like pooled models, fixed effect models, and random effect models, the Hausman check is accessible. Under the Hausman test, fixed effects and random effects are contrasted having the null hypothesis that the individual effects are uncorrelated with the other repressors in the model. If correlated (Ho is rejected), a random effect model makes prejudiced evaluators, thus allowing an option for the fixed effect model.

Table 5: Hausman Test: Choice between Fixed and Random Effects

Test Summary	Value	Criterion	Decision
Hausman test	Prob>chi2 = 0.1677	Prob>chi2 = < 0.05 or 0.01)	Since Prob > chi2 > 0.05 as well as 0.01. Random effects is preferred

Estimated using STATA 12.0 Xtreg and Hausman Commands

The table 4 for Model 1 indicates the Hausman statistic which is insignificant revealing the appropriateness of random effect model as contrast to fixed effect model. So far, the Random effects model is finalized for obtaining the conclusions.

The table 5 for Model 2 also indicates the Hausman statistic which is insignificant revealing the appropriateness of random effect model as contrast to fixed effect model. So far, the Random effects model is finalized for obtaining the conclusions.

Table 6: Hausman Test: Choice between Fixed and Random Effects

Test Summary	Value	Criterion	Decision
Hausman Test	Prob>chi2 = 0.1555	Prob>chi2 = < 0.05 or 0.01)	Since Prob > chi2 > 0.05 as well as 0.01. Random effects is preferred

Estimated using STATA 12.0 Xtreg and Hausman Commands

5. Conclusion

In this research, having possibility for acceptance NP and ROA proved as significant measure can strengthen in Pakistani Commercial banks for upcoming time. Commercial Banks of Pakistan need to enhance measuring profitability for their stakeholders. Which is possible by using different ratios which are more solid to measure as financial performance indicator. This research considers for Commercial Banks of Pakistan. FF has yet to be categorized into classified Financial Fraud so that closer connection will be undertaken. In this study we can conclude that irrespective of the measuring tools of the profitability, FF, Bank size, Liquidity, Efficiency and solvency is implementable with some justifiable ratios.

This research put into account of Pakistani Commercial Banks take as NP and ROA as profitability approach with more independent variables. So, the researcher took a step to check the effect of these on financial performance of the Banking sector of Pakistan.

It is also concluded from above detailed analysis and interpretation of results that MCB has better financial performance than other four private banks and ZTBL has better financial performance than other four government banks. The financial performance of MCB is better in private sector banking system whereas financial performance of ZTBL is better in government banking system. The conclusion is made by analyzing profitability position, liquidity position, solvency position and efficiency position of all banks during duration of five FYs from 2012 to 2017. Trend of net profit margin ratio of MCB is better than other private banks. It has more than 30% net profit margin ratio in all FYs from 2012 to 2017. UBL is performing better after MCB with respect to net profit margin ratio. Trend of net profit margin ratio of ZTBL is better than other government banks. It has more than 20% net profit margin ratio in all FYs from 2012 to 2017. Khyber Bank is performing better after ZTBL with respect to net profit margin ratio and BOP has lowest net profit margin ratio than other private banks. ZTBL has increasing trend of return on assets ratio from FY 2012 to FY 2018. Return on assets ratio of ZTBL has been increased from 1.75% to 2.84% from FY 2012 to FY 2018. The highest return on asset ratio of ZTBL is 3.33% in the FY 2014 and lowest return on assets ratio is 1.75% in FY 2012.

Solvency position of MCB is better than other four private banks and it has lower debt to equity ratios in all four FYs than other private banks. ZTBL also has lower debt to equity ratios than other four government banks in all five FYs. Debt to equity ratio of ZTBL has been decreased from 193.35% to 71.90% from FY 2012 to FY 2018. The highest debt to equity ratio of ZTBL is 193.35% in the FY 2015 and lowest debt to equity ratio is 21.39% in FY 2014. The total debt ratio of MCB is better than other four private banks which is showing the better solvency position of the bank. Total debt ratio of MCB has been increased from 86.64% to 88.43% from FY 2012 to FY 2018. The highest total debt ratio of MCB is 88.43% in the FY 2017 and lowest total debt ratio is 86.08% in FY 2014. ZTBL also has good total debt ratios than other four government banks. Total debt ratio of ZTBL has been decreased from 78.37% to 57.70% from FY 2012 to FY 2018. The highest total debt ratio of ZTBL is 88.71% in the FY 2014 and lowest total debt ratio is 23.82% in FY 2014. The solvency position of |ZTBL is better than four government banks. Overall private banks are performing better than government banks in Pakistan banking system due to better profitability position, solvency position, liquidity position and efficiency performance.

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