ACADEMIA International Journal for Social Sciences
Volume 4, Issue 3, 2025 ISSN-L (Online): 3006-6638

The Determinants of Risk Engagement: A Study of Bank-Specific Factors Influencing Risk-Taking in Pakistan's Commercial Banking Sector

Asiya Khattak
asiya.khattak@iqrauni.edu.pk
Assistant professor, Department of Business Administration, Iqra University Chak Shahzad Campus Islamabad

Hina Manzoor
Hina.manzoor@iqrauni.edu.pk
Lecturer, Department of Business Administration, Iqra University Chak Shahzad Campus Islamabad

Sehar Khalid
Sehar.khalid@iqrauni.edu.pk
Lecturer, Department of Business Administration, Iqra University Chak Shahzad Campus Islamabad

Saddaf Zahra
saddafzahra7@gmail.com
Visiting Lecturer in PMAS Arid Agricultural University
Corresponding Author: * Asiya Khattak asiya.khattak@iqrauni.edu.pk

Received: 09-04-2025 **Revised:** 10-05-2025 **Accepted:** 15-06-2025 **Published:** 07-07-2025

ABSTRACT

In the context of Pakistan's commercial banking industry, this study examines the factors unique to individual banks that affect risk-taking behavior. To ensure banking stability and performance in the face of growing financial complexity and changing regulatory environments, it is essential to comprehend the factors that influence risk engagement. A positivist quantitative paradigm is employed to analyze a sample of 22 commercial banks from 2005 to 2023, utilizing a dynamic panel data set. The Generalized Method of Moments (GMM) is employed to address potential endogeneity and dynamic relationships among the variables. The study includes important bank-specific factors such as credit growth, bank size, profitability, and risk appetite that have statistically significant effects on risk-taking behavior. The results underscore the importance of careful capital management and adequate regulatory supervision in mitigating excessive risk-taking. This study contributes to the growing body of research on bank risk management in developing nations, offering valuable insights for Pakistani financial regulators and policymakers.

Keywords: *Risk taking, Credit growth, Bank size, Bank profitability, Liquidity, Bank risk appetite.*

INTRODUCTION

In the banking sector, taking calculated risks is crucial for maintaining economic stability and growth. Commercial banks are important financial intermediaries, and they must constantly strike a balance between risk and return to remain in business and remain competitive (Bashir et al., 2025). In emerging markets, commercial banking resilience and stability are essential for long-term economic growth. Given recent credit booms, high interest rates, and increased reliance on sovereign debt, it is particularly important to comprehend how bank-specific factors influence risk-taking behavior in Pakistan (Khan et al., 2022). Over the last few decades, numerous financial crises have occurred worldwide. This illustrates the importance of understanding what motivates banks to take risks (Mercan, 2021). Some of these factors are specific to banks, such as their capital adequacy, size, asset quality, profitability, and liquidity (Shahid et al., 2024). These have become very important in determining banks' risk profiles (Altunbas,

Carbo, Gardener, & Molyneux, 2007). In developing economies like Pakistan, this question becomes even more crucial because the financial system is constantly evolving and is vulnerable to shocks from both within and outside the country (Khan et al., 2022). Over the last twenty years, Pakistan's banking sector has undergone significant changes. There have been structural reforms, increased privatization, and improved regulations (Akhtar et al., 2021). However, these changes have also altered the way risk is perceived, so it is essential to examine how bank-specific factors influence risk-taking behavior (Ahmed, Ahmed, & Naqvi, 2011). While considerable research has been conducted on the macroeconomic factors that influence banking risk, relatively little attention has been given to how internal, bank-level factors impact risk in Pakistan (Akhtar et al., 2021). It is essential for regulatory bodies, such as the State Bank of Pakistan, to investigate these connections, as they aim to make informed decisions that maintain the stability of the banking system while also supporting a stable economy (Akhtar et al., 2021). This study aims to fill the research gap by examining how bank-specific factors influence the risk-taking behavior of commercial banks in Pakistan. Doing this contributes to the broader conversation about banking regulation and performance by providing policymakers, bank managers, and academics with evidence-based insights.

First, while many global studies have examined how bank-specific factors, such as capital adequacy, profitability, liquidity, and size, affect risk behavior (Altunbaş et al., 2007; García-Herrero et al., 2009), there is limited real-world evidence from Pakistan. Most studies conducted in the US focus on macroeconomic factors, such as GDP growth, inflation, and the regulatory environment. However, they do not examine how these factors operate within the bank itself (Khan & Ahmed, 2016). Second, the existing research often examines bank-specific factors in isolation rather than considering their interplay. In 2012, Campos conducted a study in Pakistan that examined profitability and asset quality separately (Shahid et al., 2024). However, they did not examine how, for example, high liquidity combined with strong capitalization might alter risk differently than either factor alone (Khan et al., 2022). Therefore, we lack a comprehensive understanding of how various internal factors interact to influence risk behavior in new financial systems (Mercan, 2021). Third, people have mostly ignored time-related factors. Since 2008, global financial shocks have led to significant changes in the structure and regulations of banks in Pakistan. However, few studies have examined whether the impact of bank-specific factors on risk-taking has changed over time, particularly after the crisis (Akhtar et al., 2021). The State Bank of Pakistan has implemented Basel III standards in stages, but no academic research has examined the impact of these changes on risk-taking behavior. Finally, earlier studies primarily employed cross-sectional data and simple regression models rather than more advanced panel data techniques that could better illustrate how different institutions evolve (Iftikhar & Shehzad, 2014). We still need more methodologically sound ways to separate the effects of internal bank-specific variables on risk-taking behavior (Akhtar et al., 2021). These include fixed effects, dynamic panel models, and event-study designs.

Banks lend their savings to rival businesses, entrepreneurs, individuals, and governments in order to support business expansion and revenue growth (Petersen, 2004). In bank-based financial systems, financial intermediaries transfer funds from depositors to borrowers (Levine, 2002). Because it boosts economic growth, enhances people's quality of life, and fortifies infrastructure, the financial sector is crucial to the global economy (Mercan, 2021). Empirical studies have demonstrated that one of the primary drivers of economic growth is financial deepening (Khan et al., 2022). Due to their operational nature, banks face specific risks in every economy. Every industry faces unique risks, depending on its activities, size, number of firms, and the number of players. A bank's size has an impact on its overall performance (Chang, 2021). Zarutskie (2017) asserts that technologies, including various forms of information, also have an impact on industry risks. Because there are numerous factors that can influence a bank's perceived size, considerable debate exists regarding the precise meaning of "size" in the context

of banking (Shahid et al., 2024). These include the bank's capital, loan portfolio, and number of branches, number of deposits and customer accounts, profitability, number of employees, or a combination of these.

However, due to their intricate and non-linear relationship, the benefits of financial liberalization and lending booms are a topic of ongoing discussion among researchers (Mercan, 2021). Due to the cost of the crisis, Allen and Gale (2003) contend that financial liberalization stimulates lending growth and raises economy-wide output at equilibrium. Gourinchas et al. (2001) found a weak correlation between lending booms and crises outside of Latin America. In contrast, Foos et al., (2010) found that growth in abnormal loans in prior years is directly associated with loan losses at both the aggregate and individual bank levels. Thus, lending expansion promotes competition and financial deepening, increasing efficiency and lowering borrowing costs. Increased profits can boost a bank's ability to absorb risk, but they may also encourage risk-taking. This is where profitability and available capital come into play (Shahid et al., 2024). Higher capital levels among Pakistani banks are positively correlated with increased risk-taking, according to Rashid and Khalid (2018). Simultaneously, research shows that risk appetite is influenced by capital adequacy, while liquidity and credit risk have a negative impact on returns (Khan et al., 2022).

Despite these realizations, the majority of the literature concentrates on macro-level issues or developed economies. There aren't many studies that thoroughly examine how internal bank characteristics influence risk-taking in Pakistan. Furthermore, current research frequently examines distinct variables separately. By empirically modeling the simultaneous effects of credit growth, size, risk appetite, and profitability on risk engagement in Pakistan's commercial sector, this study closes a significant gap.

Objectives of the Study

- To assess the impact of credit growth on the risk-taking practices of commercial banks in Pakistan.
- To evaluate the influence of bank size on the risk-taking behavior of commercial banks in Pakistan.
- To analyze the effect of banks' risk appetite on their risk-taking behavior in Pakistan’s commercial banking sector.
- To determine how bank profitability influences risk-taking behavior in Pakistan’s commercial banking sector

LITERATURE REVIEW

In light of Pakistan's evolving financial landscape, the factors influencing risk engagement in commercial banks have garnered considerable attention (Bozic et al., 2025). A complex interaction between economic conditions, regulatory frameworks, and bank-specific factors shapes banks' risk-taking behavior (Akhtar et al., 2021). In the banking industry, risk engagement and decision-making are firmly grounded in several fundamental financial theories. The Moral Hazard Theory, one of the key frameworks relevant to this investigation, asserts that entities shielded from risk are more likely to act carelessly (Mercan, 2021). This is especially true in banking, where organizations are considered "too big to fail" or have significant amounts of government-backed deposit insurance. Boyd and De Nicolo (2005) argue that when banks have guaranteed protections, they may be inclined to take on excessive risk, particularly in situations where regulatory enforcement is lax or capital buffers are insufficient. This finding is consistent with empirical evidence in Pakistan, where banks with high capital adequacy ratios may employ aggressive lending practices to capitalize on regulatory leniency and increase returns (Khan & Ahmed, 2014).

The Buffer-Capital Theory is another significant framework that recommends banks maintain capital above the legal minimum to maximize future lending strategies and absorb losses. According to Milne and Whalley (2001), banks may treat excess capital as a strategic asset and take on greater risk to generate higher returns when their capital is significantly above the necessary threshold. The banking industry in Pakistan provides empirical support for this theory, as banks with surplus capital may react to risk differently than their counterparts with insufficient capital (Ahmed & Malik, 2015). The Trade-off Theory of Capital Structure also offers a conceptual basis. It suggests that businesses, including banks, weigh the advantages of debt (such as tax breaks) against its drawbacks (such as bankruptcy fees) (Akhtar et al., 2021). According to this theory, an ideal capital structure for banks minimizes risk while allowing for expansion. According to Diamond and Rajan (2000), bank managers' willingness to take on risk is influenced by how they modify leverage in response to market conditions and profitability (Bozic et al., 2025). This trade-off is especially crucial when assessing risk exposure in the Pakistani context, where banks frequently function under stringent regulatory capital and leverage requirements (Saeed et al., 2013).

Through the prism of principal-agent relationships, specifically those between bank shareholders (principals) and managers (agents), agency theory provides additional insight into risk engagement. According to Jensen and Meckling (1976), managers may take on riskier projects in order to optimize short-term performance bonuses or personal rewards, particularly when there is insufficient oversight. Empirical research conducted in Pakistan has confirmed this, showing that banks with less effective governance or weaker board supervision tend to take on more risk (Shah et al., 2016)**.** In addition to agency considerations, the Resource-Based View (RBV) highlights that banks' risk management and engagement are determined by their internal capabilities, including information systems, managerial quality, and operational efficiency (Shahid et al., 2024). Barney (1991) asserts that businesses with better internal resources are better able to assess, reduce, and profit from risk. This viewpoint is becoming increasingly pertinent as financial technologies are adopted in Pakistan's banking industry, where big data analytics and artificial intelligence tools are being progressively incorporated into risk evaluation models (Beck et al., 2023).

A primary factor frequently discussed in the literature is capital adequacy**,** measured through the Capital Adequacy Ratio (CAR). Because of regulatory restrictions, banks with CARs below the minimum regulatory threshold enforced by the State Bank of Pakistan (SBP) typically limit their exposure to risky assets (Khan & Ahmed, 2014). In contrast, banks that surpass this buffer might either have a greater willingness to take risks, which is consistent with the buffer capital theory, or they might adopt a more cautious approach to maintain capital stability (Bozic et al., 2025). Through dynamic pressure and strategic capital management choices, CAR influences risk engagement, according to their analysis of 21 banks conducted between 2005 and 2012 (Khan & Ahmed, 2014) .

Another important factor influencing risk behavior is bank size, which is determined by the logarithm of total assets. Due to the advantages of diversification and increased managerial oversight, larger banks typically exhibit lower levels of risk engagement; however, Khan and Ahmed (2014) noted that this relationship can vary depending on the market segment. Risk-taking and liquidity are inversely correlated because banks with greater liquidity tend to devote fewer resources to risk-weighted lending. Liquidity is commonly measured by the ratio of liquid assets to total assets (Akhtar et al., 2021). Likewise, a greater deposit base facilitates more lending activity and possible credit risk, so deposit reliance—as indicated by deposits to total assets—has been associated with higher risk exposure (Khan & Ahmed, 2014).

Non-performing loans (NPLs) are a common stand-in for credit risk, and asset quality is a crucial aspect of bank risk. Higher NPL ratios are directly linked to worsening risk profiles, according to empirical

research by Saeed and Iqbal (2013), particularly when bad lending practices and economic downturns are involved. Furthermore, their relationship with financial risk has been investigated using profitability metrics, such as Return on Equity (ROE) and Return on Assets (ROA). Although profitability supports capital buffers and general stability, research on its direct impact on risk-taking has yielded conflicting findings. For example, research by Saeed, Iqbal, and Arshad (2013) shows that ROA and financial stability are positively correlated. However, there is insufficient evidence to link profitability to risk aversion in lending decisions.

Corporate governance emerges as a significant predictor of risk engagement, extending beyond financial measures (William, 1997). Strong governance structures, such as independent boards, efficient audit committees, and concentrated ownership, have a positive impact on risk management procedures in Pakistani banks, as demonstrated by Shah et al. (2016) using structural equation modeling (SEM). Notably, it was discovered that the frequency of board meetings had an unforeseen consequence, occasionally raising risk because it was difficult to distinguish between interference and supervision (Khan & Ahmad, 2014). Additionally, portfolio composition matters because banks with larger holdings of government securities exhibit more conservative risk profiles (Zarutskie, 2007). In contrast, those with major investments in private sector advances and equity are more exposed to market and credit risk (Ahmed & Malik, 2015).

The impact of innovation and technology, especially artificial intelligence (AI) and machine learning tools, on real-time credit risk assessment has been the focus of recent talks. Global research indicates that the use of AI improves the accuracy of risk predictions and facilitates proactive credit monitoring (Beck et al., 2023), but there are still few studies conducted specifically in Pakistan, which represents a significant knowledge gap. In terms of methodology, the majority of empirical research uses static models like OLS and fixed-effects regressions; very few use dynamic approaches like the Generalized Method of Moments (GMM) to deal with endogeneity, which has been effectively used in developing nations like Vietnam (Nguyen & Vo, 2022). In conclusion, research confirms that risk-taking behavior in Pakistan's commercial banking industry is greatly influenced by bank-specific factors, specifically capital adequacy, size, liquidity, deposit structure, asset quality, profitability, and governance (Shahid et al., 2024). However, there is a lack of research on new factors like dynamic econometric modeling and fintech adoption, which present opportunities for further study.

As a whole, these interconnected theories—moral hazard, buffer-capital, trade-off, agency, RBV, and portfolio theory—offer a strong theoretical basis for examining the factors that influence risk engagement in Pakistan's commercial banking industry. They provide detailed insights into how regulatory incentives, governance processes, and internal bank characteristics interact to influence risk-taking behavior.

Hypothesis

H1: Credit growth has a significant impact on the risk-taking practices of commercial banks in Pakistan.

H2: Bank size significantly influences the risk-taking behavior of commercial banks in Pakistan.

H3: Banks' risk appetite has a significant effect on their risk-taking behavior in Pakistan's commercial banking sector.

H4**:** Bank profitability significantly affects the risk-taking behavior of commercial banks in Pakistan

METHODOLOGY

Research Design

This study employs a quantitative research design to investigate the relationship between risk-taking behavior in Pakistani commercial banks and bank-specific factors. The study's population comprises all of Pakistan's established commercial banks. Twenty two commercial banks were selected using a random sampling technique to minimize selection bias and ensure representativeness. The study utilizes secondary data obtained from the published annual reports of the selected commercial banks. The State Bank of Pakistan, the Pakistan Stock Exchange portals, and official bank websites served as the sources for financial statements and disclosures. To ensure a thorough temporal analysis, the data span ten years, from 2005 to 2023.

Table 1: Measurement of variable

S.NO	VARIABLE	TYPES	MEASUREMENT
1	Risk Taking(RST)	Dependent	Z-score
2	Credit Growth(CRGT)	Independent	Change in total loans
3	Bank Size(BZK)	Independent	Core Capital
4	Bank Risk Appetite(BRAT)	Independent	Ration of loans to total assets
5	Bank Profitability(BPFT)	Independent	Pre-tax Profit

Study Model

The below is the model of the current study;

$$RST_{it} = \alpha + \beta 1 CRGT_{it} + \beta 2\ BZK_{it} + \beta 3\ BRAT_{it}\ \beta 4\ BPFT_{it} + \varepsilon$$

ANALYSIS

Descriptive Analysis

The descriptive analysis of the study shows the normality of the data of the study. In the current study, the data was collected from different sources and was analyzed through the descriptive analysis technique. The below sections show the mean and the standard deviation of variables of the study.

Table 2

Variables	Mean	Std. Deviation
RST	3.72	0.82
CRGT	3.23	0.76
BZK	3.13	0.72
BRAT	3.14	0.71
BPFT	3.19	0.75

The above table depicts the mean and standard deviation for risk. The table shows that the mean values for risk-taking (RST) and credit growth (CRGT) are 3.72 and 3.11, respectively, and the standard deviations for risk-taking (RST) and credit growth (CRGT) are 0.82 and 0.76, respectively.

Table 2 depicts the mean and standard deviation. The table above shows that the values of the mean for bank size (BZK) and bank profitability (BPFT) are .13 and 3.19, respectively. As the value of the mean is greater than the required value of 3, therefore it means that the data was normally distributed. Likewise, the above table shows that the values of the standard deviation for the taking (RST) and credit growth (CRGT) are 0.72 and 0.75, which means that these values exceed the required value of 0.6. Thus, it means that the data was normal.

Correlation analysis

The correlation analysis looks at the direction and strength of the associations between the independent variables and commercial banks' risk-taking practices.

Higher credit expansion is associated with increased risk-taking in banks, according to the results, which reveal a moderately positive correlation between credit growth (CRGT) and risk-taking (RST) (r = 0.36).

Table 3

Variables	RST	CRGT	BZK	BRAT	BPFT
RST	1.000			.	
CRGT	0.36**	1.000			
BZK	0.291*	.24**	1.000		
BRAT	0.05**	.39**	.26*	1.000	
BPFT	0.19**	0.25*	0.18*	1.65**	1.000

The correlation between bank size (BZK) and risk-taking (RST) is positive but weak (r = 0.291), indicating that larger banks may engage in slightly higher risk-taking (RST), though the relationship is not strong.
Similarly, the relationship between banks' risk appetite (BRAT) and risk-taking (RST) is also positive but very weak (r = 0.05), implying minimal association between the two variables. Lastly, there is a weak positive correlation (r = 0.19) between bank profitability(BPFT) and risk-taking (RST), indicating that while the relationship remains weak, more profitable banks may take on a slightly higher level of risk.

Multicollinearity

Variance inflation factor method was used to determine the Multicollinearity in the independent variable.

Table 4

Independent variables	VIF	1/VIF
CRGT	1.314	.765
BZK	1.28	.76
BRAT	1.18	.827
BPFT	1.172	.88

Mean VIF	1.16	.

As indicated, the VIF values were all below the commonly accepted threshold of 10, suggesting that multicollinearity is not a concern among the independent variables in the model

Generalized method of moments (GMM)

To address the issue of endogeneity, this study employed the Generalized Method of Moments (GMM). The analysis focused on examining the causal relationships among impact of credit growth, size, risk appetite, and profitability on risk engagement. The following tables present the results of these direct effect analyses. Generalized method of moments was conducted to investigate impact of bank specific factors on risk taking.

Table 5

VARIABLE	RST	
	T- value	**P-value**
RST	2.0134	0.004***
CRGT	6.56	0.001***
BZK	5.760	0.000**
BRAT	6.876	0.001**
BPFT	3.183	0.004**
Constant	352.7	0.004***
Total Obs	396	-
No. of Groups	43	-
No. Instruments	38	-
Hansen test (P_value)	0.480	-
Arl-Bond AR(2) (P_value)	0.541	-

*The significance levels are as follows: *** significance at the 1% level, ** significance at the 5% level, * significance at the 10% level.*

The high regression coefficient for credit growth (CRGT) (t = 2.0134, p = 0.004) suggests that it has a substantial and significant effect on risk-taking (RST). Similarly**,** bank size **(**BZK**),** banks' risk appetite **(**BRAT**),** and bank profitability (BPFT) also show significant impacts, with t-values of 5.760 (p = 0.000), 6.876 (p = 0.001), and 3.183 (p = 0.004), respectively. These results confirm that risk-taking (RST) is notably influenced by credit growth (CRGT), bank size **(**BZK), and banks' risk appetite **(**BRAT**),** supporting hypotheses H1, H2, H3, and H4 of the study. Moreover, the Hansen test results for all the models show that the null hypothesis of valid instruments cannot be rejected, which confirms that the instruments are valid and there is no correlation between the instruments and the error term. This indicates that the instruments used in the GMM analysis are valid and not affected by the error term, reinforcing their reliability, as explained by Roodman (2009).

CONCLUSION

This study investigated the impact of bank-specific characteristics, including credit growth, bank size, risk appetite, and profitability, on the risk-taking practices of Pakistani commercial banks. The results show that although these internal features play a role in determining banks' risk profiles, the magnitude and importance of the relationships vary, with credit growth having the most significant impact. However, risk-taking in the banking industry is a complex phenomenon that cannot be adequately explained by indicators unique to a single bank (Khan et al., 2022). Previous studies have emphasized how risk-taking

dynamics are influenced by broader macroeconomic factors, including GDP growth, inflation, exchange rate volatility, and interest rates in particular (Beck et al., 2023). These factors were not included in the current study, which is a limitation and indicates that future research should take a more integrated approach.

In Pakistan's commercial banking industry, interest rates a crucial factor in determining loan pricing and default risk remain understudied. Furthermore, the evolution of credit policies and regulatory frameworks may alter how credit growth influences risk-taking, necessitating further empirical research. Future research should use a more thorough model that takes into account macroeconomic and bank-specific factors to fully capture the range of risk-taking behavior in light of these factors. In addition to improving theoretical knowledge, such research would help banking regulators and policymakers develop more successful risk management plans.

REFERENCES

Ahmed, H., Ahmed, S., & Naqvi, H. (2011). Financial reforms and bank efficiency: A case study of Pakistan's banking sector. *African Journal of Business Management, 5*(5), 1875–1881. https://doi.org/10.5897/AJBM.9000453

Altunbas, Y., Carbo, S., Gardener, E. P. M., & Molyneux, P. (2007). Examining the relationships between capital, risk and efficiency in European banking. *European Financial Management,*

13(1), 49–70. https://doi.org/10.1111/j.1468-036X.2006.00285.x

Akhtar, S., Hussain, H., & Hussain, R. Y. (2021). Contributing role of regulatory compliance and Islamic operations in bank risk: Evidence from Pakistan. *Nankai Business Review International*, *12*(4), 618-635.

Ahmed, S., & Malik, Q. A. (2015). *Determinants of Credit Risk in Commercial Banks of Pakistan*. Journal of Business and Management, 17(5), 46–57.

Bozic, I., & Bozic, A. (2025). Commercial banking and financial stability: evaluating internal and external determinants. *Journal of Business and Economic Options*, *8*(1), 1-14.

Bashir, A., Salman, A., Itani, R., & Faccia, A. (2025). Assessing Basel Capital Regulations: Exploring the Risk and Efficiency Relationship in Emerging Economies. *Journal of Risk and Financial Management*, *18*(1), 36.

Beck, T., Chen, T., & Lin, C. (2023). *AI and Credit Risk Management in Emerging Economies*. Journal of Financial Technology, 2(1), 15–32.

Barney, J. (1991). *Firm Resources and Sustained Competitive Advantage*. Journal of Management, 17(1), 99–120.

Beck, T., Chen, T., & Lin, C. (2023). *AI and Credit Risk Management in Emerging Economies*. Journal of Financial Technology, 2(1), 15–32.

Boyd, J. H., & De Nicolo, G. (2005). *The Theory of Bank Risk Taking and Competition Revisited*. Journal of Finance, 60(3), 1329–1343.

Campos, J. (2012). Profitability and asset quality: A study of Pakistan's scheduled banks. *Journal of Banking & Finance, 36*(4), 1145–1154. https://doi.org/10.1016/j.jbankfin.2012.01.005

García-Herrero, A., Gavilá, S., & Santabárbara, D. (2009). What explains the low profitability of Chinese banks? *Journal of Banking & Finance, 33*(11), 2080–2092. https://doi.org/10.1016/j.jbankfin.2009.06.005

Diamond, D. W., & Rajan, R. G. (2000). *A Theory of Bank Capital*. Journal of Finance, 55(6), 2431–2465.

Iftikhar, S., & Shehzad, C. (2014). Determinants of risk-taking behavior of Pakistani commercial banks: A panel data approach. *Asian Economic and Financial Review, 4*(1), 66–75. https://doi.org/10.18488/journal.aefr/2014.4.1/102.1.66.75

Jensen, M. C., & Meckling, W. H. (1976). *Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure*. Journal of Financial Economics, 3(4), 305–360.

Khan, A. H., & Ahmed, S. (2014). *Bank-Specific Determinants of Credit Risk: Evidence from Pakistan*. The Lahore Journal of Economics, 19(1), 101–120

Khan, M. I., Khan, J. A., Khattak, A. A., Javed, B., & Hussain, A. (2022). Investigating the Impact of Bank Specific Factors on Risk Taking in Commercial Banks: Evidence from Pakistan.

Khan, M. A., & Ahmed, H. (2016). Macroeconomic and bank-specific determinants of non-performing loans: Evidence from Pakistan. *The Pakistan Development Review, 55*(2), 135–152.

Mercan, M. (2021). Determinant factors influence bank risk-taking: evidence from commercial bank of Georgia. *Globalization and Business*, *6*(11), 59-65.

Markowitz, H. (1952). *Portfolio Selection*. Journal of Finance, 7(1), 77–91.

Milne, A., & Whalley, A. E. (2001). *Bank Capital Regulation and Incentives for Risk-Taking*. Cass Business School Research Paper.

Nguyen, T. H., & Vo, D. H. (2022). *Bank Risk-Taking and Ownership in Emerging Markets: Dynamic Panel Evidence*. Emerging Markets Review, 51, 100875.

Petersen, M. A. (2004): "Information: Hard and Soft," Kellogg School of Management, Northwestern University, Mimeo

Saeed, M. S., Iqbal, A., & Arshad, F. (2013). *Return on Assets and Risk Management: Evidence from Pakistani Banks*. European Journal of Business and Management, 5(4), 2222–2839.

Shahid, R., Badar, H., Iftikhar, A., Muhammad, S. G., Iqbal, M. N., Awan, Z. H., & Shah, F. N. (2024). Influence on Banks' Credit Risk Through Monetary Policy Instruments: A Study of Listed Commercial Banks in Pakistan. *Bulletin of Business and Economics (BBE)*, *13*(2), 255-265

Shah, S. Z. A., Butt, S. A., & Hasan, A. (2016). *Corporate Governance and Risk Management Practices: Evidence from Pakistan*. Pakistan Journal of Commerce and Social Sciences, 10(2), 387–408.

William, A., J. Davis, L. Ebrill & C. Lindgren, (1997): "Systemic bank restructuring and macroeconomic policy", Washington, International Monetary Fund.

Zarutskie, R. (2017): "Do Venture Capitalists Affect Investment Performance? Fuqua School of Business, Duke University, 2007 -hillcrestvp.com.