ANALYZING THE NEXUS BETWEEN LIQUIDITY MANAGEMENT AND PROFITABILITY: A COMPARATIVE STUDY OF PUBLIC, PRIVATE, AND FOREIGN SECTOR BANKS IN INDIA

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ABSTRACT

In the ever-evolving landscape of the Indian banking sector, the intricate dance between liquidity management and profitability remains a pivotal focus for stakeholders, policymakers, and industry participants. This comprehensive study embarks on a nuanced exploration, employing a comparative lens to scrutinize the diverse approaches and outcomes within public, private, and foreign sector banks. The central objective is to unravel the multifaceted dynamics that underlie the interplay between liquidity management strategies and the overarching profitability of these financial institutions.The research methodology involves an in-depth analysis of key financial indicators, liquidity metrics, and profitability measures, drawing from extensive datasets and financial reports spanning an appropriate time horizon. By juxtaposing the strategies and outcomes of public, private, and foreign sector banks, the study seeks to identify patterns, disparities, and potential influencing factors that contribute to the intricate tapestry of financial performance.Given the unique ownership structures inherent in public, private, and foreign sector banks, the study delves into how these distinctive features influence the banks' liquidity management approaches and, subsequently, their profitability trajectories. It considers the impact of regulatory frameworks, market dynamics, and global economic factors on the decision-making processes of banks within each sector.The findings of this study are anticipated to offer valuable insights for a spectrum of stakeholders. Policymakers can benefit from a nuanced understanding of the implications of regulatory interventions on liquidity and profitability. Practitioners within the banking industry can derive strategic insights to optimize their liquidity management practices in alignment with profitability objectives. Additionally, investors, analysts, and researchers stand to gain a deeper comprehension of the variables that contribute to the financial resilience of banks in the Indian context.

Keywords: Liquidity Management, Profitability, Ownership Structures, Public, Private, And Foreign Sector Banks, India, etc.

I. INTRODUCTION

In the dynamic landscape of the Indian banking sector, the intricate dance between liquidity management and profitability has emerged as a critical area of scrutiny and interest. As financial institutions navigate through a complex web of regulatory frameworks, global economic uncertainties, and diverse ownership structures, the need to unravel the underlying dynamics that link

liquidity strategies with overall profitability becomes increasingly apparent. This comprehensive comparative study delves into the multifaceted dimensions of liquidity management and profitability across public, private, and foreign sector banks in India.

The banking sector in India is characterized by a diverse array of institutions, each operating under distinct ownership models. Public sector banks, with government ownership, private sector banks, driven by private entities, and foreign sector banks, carrying the imprints of overseas ownership, collectively contribute to the intricate fabric of the financial ecosystem. Against this backdrop, our research seeks to undertake a granular exploration, comparing and contrasting the strategies, outcomes, and influencing factors that shape liquidity and profitability trends within each sector.

At the heart of this inquiry is the recognition that liquidity management, a critical aspect of financial strategy, is inexorably linked to the overarching goal of sustained profitability. The study employs a holistic approach, drawing from quantitative analyses of key financial indicators and liquidity metrics, complemented by qualitative assessments to capture the strategic nuances and contextual intricacies that define the decision-making processes of these banks. Beyond a mere numerical exploration, the research seeks to unravel the narrative behind the numbers, providing a richer understanding of the strategic considerations that influence liquidity and profitability outcomes.

This research holds significance for a broad spectrum of stakeholders. Policymakers grappling with the design and implementation of regulatory frameworks will find insights into the potential impacts on liquidity and profitability. Practitioners within the banking industry stand to gain strategic perspectives to optimize their liquidity management practices in alignment with profitability objectives. Investors, analysts, and researchers will derive value in understanding the variables that contribute to the financial resilience of banks in the Indian context.

As we embark on this journey of exploration, the study aspires not only to contribute to the academic discourse on financial management but also to provide actionable insights for those actively engaged in the Indian banking sector. In an era marked by financial uncertainties and rapid changes, a nuanced understanding of the intricate relationship between liquidity management and profitability is not just desirable but imperative, and this study seeks to fill this critical gap in contemporary financial research.

II. REVIEW OF LITERATURE

Bordeleau and Graham (2010),An analysis conducted on a sample of major US and Canadian banks revealed that profitability typically increased for banks that maintained a certain level of liquid assets. "However, it was observed that above a certain threshold, maintaining more liquid assets actually decreased the banks' profitability, all other factors being constant." Moreover, the results indicated that this correlation fluctuates based on a bank's operational structure and the economic conditions.

Guruswamy (2012) Assessed the profitability of SBI and determined that State Bank of Patiala, State Bank of Hyderabad, State Bank of Indore, and State Bank of Bikaner exhibited the highest level of dynamism in generating profits compared to SBI.

Munteanu (2013), An analysis was conducted using panel data from Eastern and Central European commercial banks spanning from 2003 to 2010. The findings revealed a marginal positive and negative influence of liquidity on both return on equity (ROE) and return on assets (ROA), indicating a non-linear correlation between these variables. According to Ibe (2013), there is a notable correlation between cash and short-term money and the profitability of Nigerian banks.

Isaiah Oino (2016) The aim of this research was to evaluate the distinctions between private banks and public banks in relation to their risk management practises. Based on data from 14 banks throughout the period of 2009-2012, it is evident that private banks have higher levels of capitalization in comparison to public banks. The Capital Adequacy Ratio (CAR) is 17% for commercial banks and 13% for public banks. The Reserve Bank of India (RBI) has established a Capital Adequacy Ratio (CAR) requirement of 9% for Indian banks, surpassing the standards observed in the majority of industrialised nations. The capital adequacy ratio of public sectors is decreasing as a result of increased credit demand and the need for additional provisions to protect against the degradation of asset quality. The presence of non-performing assets (NPAs) has adverse effects on the capital adequacy ratio, profitability, and bank credibility (Kumar and Singh, 2012). The use of fixed effects yields findings that align with prior research (Kaaya and Pastroy, 2013; Frederick, 2012; Kithinji, 2010; Felix and Claudine, 2008). The NPA has a major negative impact on the profitability of both private and state banks. The rise in non-performing assets (NPA) in both public and commercial banks may be ascribed to the diversion of funds from their intended purpose and the theft of money by borrowers. In addition to the aforementioned issues such as economic downturn, market changes due to regulations, and weak management and labour relations, businesses have been impacted by these circumstances and have been unable to fulfil their loan repayment obligations. The analysis indicates that public sector banks had a substantial decrease in net interest margin (NIM) compared to private banks. This may be attributed to the fact that private banks have the ability to mitigate risk via diversification. Hence, the findings suggest that credit risk management has a substantial impact on both public and private banks. However, private banks have superior capitalization and more efficient management in terms of asset quality when compared to the public sector. However, it is necessary to include other macroeconomic indicators and the bank's size in evaluating capital sufficiency and profitability for both private and public banks in future studies.

Birajit Mohanty and Shweta Mehrotra (2018) This research aims to analyse the impact of liquidity management on the profitability of both public and private sector banks in India. In order to achieve this objective, a total of 27 banks from the public sector and 20 banks from the private sector were taken into account during the time periods of 2011-12 and 2015-16. The Cash-Deposit Ratio (CDR), Credit-Deposit Ratio (CRDR), and Investment-Deposit Ratio (IDR) are used as separate measures to indicate how banks manage their liquidity. Meanwhile, Return on Assets (ROA) and Return on Equity (ROE) are used as substitute measures to assess the profitability of the banks.

Research has shown a noteworthy adverse impact of CDR (Credit Default Risk) and IDR (Interest Default Risk) on ROA (Return on Assets). Nevertheless, when examining the Return on Equity (ROE), it is evident that there is no substantial correlation between the profitability and liquidity of banks, regardless of the specific factors or the kind of commercial banks in India. Consequently, commercial banks may prioritise enhancing their profitability without compromising their liquidity, and vice versa.

Bhati et al (2021) The primary aim of this research is to analyse the factors that influence the liquidity of private and public sector banks in India, in order to evaluate the efficacy of liquidity management strategies used by each kind of bank in India. This research examines the lasting impact of different macroeconomic, microeconomic, and regulatory policies on the management of liquidity by both types of banks from 1996 to 2016. "The study's results indicate that both public sector banks and private sector banks depend on asset-based liquidity." This research discovered a substantial correlation between liquidity and many explanatory factors, such as call rate, discount rate, cash reserve ratio, capital to total assets, foreign exchange reserve with RBI, and Size (LogTA), in both private and public sector banks. The study also noted that some parameters, such as LogTA (in L1), Capital TA (in L1 & L4), and SLR (in L3 & L4), had a notable beneficial impact on liquidity in private banks. Conversely, other indicators, including Fxreserve and ROE (in L2), had a substantial negative correlation with liquidity. Similarly, certain variables in public banks had a notable positive impact on liquidity, including the discount rate, return on equity (ROE), and non-performing assets to advances ratio (NPA/Advances). "Conversely, other variables such as capital turnover ratio (CapitalTA), cash reserve ratio (CRR), non-performing assets to advances ratio (NPA/Advances), and logarithm of total assets (LogTA) exhibited a significant negative correlation with liquidity." The results of this research challenge the suitability of implementing uniform regulatory procedures for all categories of banks by regulators in terms of liquidity generation.

III. OBJECTIVES OF THE STUDY

1. To Examine the Relationship between Liquidity Management and Profitability.

2. Compare Liquidity Management Strategies Across Sectors.

3. Investigate the Influence of Ownership Structures on Financial Performance.

4. Provide Insights for Policymakers and Industry Practitioners.

IV. RESEARCH METHODOLOGY

Liquidity and Profitability Basics:

Analyzing liquidity involves key ratios—Cash-Deposit Ratio (CDR), Credit-Deposit Ratio (CRDR), and Investment-Deposit Ratio (IDR). These metrics reveal a bank's ability to quickly convert assets and meet debt obligations. On the profitability front, ratios like Return on Assets (ROA) and Return on Equity (ROE) offer insights into a bank's financial health.

Understanding the Ratios:

CDR assesses a bank's lending ability from deposits.

CRDR indicates the bank's capacity to create loan assets from deposits.

IDR represents a bank's total investments divided by total deposits.

ROA gauges a bank's profitability in relation to total assets.

ROE measures the profit generated on owners' capital.

Sampling and Design:

For a focused approach, I'm using purposive sampling—considering 27 public sector banks, 20 private sector banks, and 15 foreign sector banks out of the total 93 scheduled commercial banks listed by the RBI in December 2016.

Data and Period:

Relying on secondary data from RBI publications, the study spans from 2008-09 to 2017-18. This ensures a robust dataset for analysis, characterized by accuracy and replicability.

Analysis Tools:

Utilizing correlation analysis to unveil relationships and regression models to understand the impact of liquidity management on profitability. The study customizes regression models for public, private, and foreign banks, evaluating predictor variables (ROA and ROE) and criterion variables (CDR, CRDR, and IDR).

This research isn't just about numbers; it's a narrative of Indian banking, offering insights for policymakers, bankers, and investors. It's a contribution to unravelling the complex dynamics of financial management in the banking sector.

V. ANALYSIS AND INTERPRETATIONS

The descriptive statistics is shown in Table below.

Table1:DescriptiveStatistics

Measures/ Variables	Range	Minimum	Maximum	Mean	Std. deviation	Coefficient of Variation
ForeignSectorBanks						
ROE	3.53	8.00	11.53	9.9180	1.408	0.141

ROA	0.38	1.54	1.92	1.7200	0.173	0.100
IDR	18.21	61.30	79.51	69.8940	7.848	0.112
CRDR	12.27	79.24	91.51	83.4380	4.753	0.056
CDR	3.19	5.18	8.37	6.7800	1.245	0.183
ValidN	15					
PrivateSectorBanks						
ROE	2.65	13.81	16.46	15.496	1.051	0.068
ROA	.18	1.50	1.68	1.598	0.079	0.049
IDR	10.39	34.45	44.84	40.250	4.748	0.118
CRDR	8.40	81.90	90.30	85.042	3.440	0.040
CDR	.87	5.33	6.20	5.836	0.372	0.064
ValidN	20					
PublicSector Banks						
ROE	18.80	-3.47	15.33	8.268	7.292	0.882
ROA	1.08	-0.20	0.88	0.488	0.426	0.873
IDR	2.03	28.59	30.62	29.612	0.891	0.030
CRDR	50.34	27.51	77.85	66.724	21.955	0.329
CDR	.74	4.86	5.60	5.360	0.306	0.057
ValidN	27					

The table presents key descriptive statistics for measures and variables across three sectors: Foreign Sector Banks, Private Sector Banks, and Public Sector Banks.

Foreign Sector Banks:

Return on Equity (ROE) ranges from 8.00% to 11.53%, with a mean of 9.9180% and a moderate standard deviation of 1.408%. The Coefficient of Variation (CV) is 0.141, suggesting a moderate level of variability. Return on Assets (ROA) shows a range of 1.54% to 1.92%, a mean of 1.7200%, and a relatively low standard deviation of 0.173%. The CV is 0.100, indicating relatively low variability. Investment-Deposit Ratio (IDR) ranges from 61.30% to 79.51%, with a mean of 69.8940% and a moderate standard deviation of 7.848%. The CV is 0.112, suggesting moderate variability. Credit-Deposit Ratio (CRDR) spans from 79.24% to 91.51%, with a mean of 83.4380% and a low standard deviation of 4.753%. The CV is 0.056, indicating low variability. "Cash-Deposit Ratio (CDR) ranges from 5.18% to 8.37%, with a mean of 6.7800% and a moderate standard deviation of 1.245%. The CV is 0.183, pointing to moderate variability."

Private Sector Banks:

ROE displays a range of 13.81% to 16.46%, with a mean of 15.496% and a low standard deviation of 1.051%. The CV is 0.068, indicating relatively low variability. ROA ranges from 1.50% to 1.68%, with a mean of 1.598% and a low standard deviation of 0.079%. The CV is 0.049, suggesting low variability. IDR spans from 34.45% to 44.84%, with a mean of 40.250% and a moderate standard deviation of 4.748%. The CV is 0.118, indicating moderate variability. CRDR ranges from 81.90% to 90.30%, with a mean of 85.042% and a low standard deviation of 3.440%. The CV is 0.040, indicating low variability. CDR ranges from 5.33% to 6.20%, with a mean of 5.836% and a low standard deviation of 0.372%. The CV is 0.064, suggesting relatively low variability.

Public Sector Banks:

ROE exhibits a wide range from -3.47% to 15.33%, with a mean of 8.268% and a substantial standard deviation of 7.292%. The CV is 0.882, indicating high variability. ROA has a range of -0.20% to 0.88%, with a mean of 0.488% and a standard deviation of 0.426%. The CV is 0.873, suggesting high variability. IDR spans from 28.59% to 30.62%, with a mean of 29.612% and a low standard deviation of 0.891%. The CV is 0.030, indicating low variability. CRDR ranges from 27.51% to 77.85%, with a mean of 66.724% and a substantial standard deviation of 21.955%. The CV is 0.329, indicating moderate variability. CDR ranges from 4.86% to 5.60%, with a mean of 5.360% and a low standard deviation of 0.306%. "The CV is 0.057, suggesting low variability."

In summary, the descriptive statistics provide a comprehensive overview of the variability and central tendencies in key financial measures for each sector, setting the stage for a deeper understanding of the financial performance of banks in each category.

Table 2: Correlation between Liquidity Management & Profitability

Variables	ForeignSectorBanks					
ROE	PearsonCorrelation	.729	.769	.638	.921**	1
	Sig.(2-tailed)	.162	.129	.247	.027	
ROA	PearsonCorrelation	.489	.222	.557		.027

	Sig.(2-tailed)	5	5	5	5	5
IDR	PearsonCorrelation	.791	.863	1	.356	.638
	Sig.(2-tailed)	.111	.059		.557	.247
CRDR	PearsonCorrelation	.561	1	.863	.664	.769
	Sig.(2-tailed)	.325		.059	.222	.129
CDR	PearsonCorrelation	1	.561	.791	.413	.729
	Sig.(2-tailed)		.325	.111	.489	.162
PrivateSectorBanks						
ROE	PearsonCorrelation	.165	-.787	.628	.819	1
	Sig.(2-tailed)	.791	.114	.257	.090	
ROA	PearsonCorrelation	.324	-.328	.080	1	.819
	Sig.(2-tailed)	.594	.590	.898		.090
IDR	PearsonCorrelation	-.097	-.962***	1	.080	.628
	Sig.(2-tailed)	.877	.009		.898	.257
CRDR	PearsonCorrelation	-.052	1	-.962***	-.328	-.787
	Sig.(2-tailed)	.934		.009	.590	.114
CDR	PearsonCorrelation	1	-.052	-.097	.324	.165
	Sig.(2-tailed)		.934	.877	.594	.791
PublicSectorBanks						
		CDR	**CRDR**	**IDR**	**ROA**	**ROE**
ROE	PearsonCorrelation	-.398	-.497	.741	.999***	1
	Sig.(2-tailed)	.507	.395	.152	.000	
ROA	PearsonCorrelation	-.429	-.469	.749	1	.999***
	Sig.(2-tailed)	.471	.426	.145		.000
IDR	PearsonCorrelation	-.643	-.278	1	.749	.741
	Sig.(2-tailed)	.242	.650		.145	.152
CRDR	PearsonCorrelation	-.481	1	-.278	-.469	-.497
	Sig.(2-tailed)	.412		.650	.426	.395
CDR	PearsonCorrelation	1	-.481	-.643	-.429	-.398
	Sig.(2-tailed)		.242	.471	.507	

The correlation coefficients presented in Table 2 depict the relationships between liquidity management and profitability variables for each sector—Foreign, Private, and Public.

Foreign Sector Banks:

In the foreign sector, Return on Equity (ROE) demonstrates a strong positive correlation with Return on Assets (ROA) (Pearson correlation = 0.729, p = 0.162), suggesting a harmonious relationship. The correlation between ROE and Investment-Deposit Ratio (IDR) is moderately positive (0.638, p = 0.247), while the correlation with Credit-Deposit Ratio (CRDR) is exceptionally strong (0.921, p = 0.027). Additionally, ROE and Cash-Deposit Ratio (CDR) show a robust positive correlation (0.769, p = 0.129). "The correlation between ROA and IDR is moderate (0.557, p = 0.557), contributing to the understanding of these banks' liquidity-profitability dynamics."

Private Sector Banks:

For private sector banks, ROE displays a weak positive correlation with ROA (0.165, p = 0.791) and a moderate positive correlation with IDR (0.628, p = 0.257). The relationship strengthens with CRDR (0.819, p = 0.090), indicating a significant positive connection. However, ROE and Cash-

Deposit Ratio (CDR) exhibit a strong negative correlation (-0.787, p = 0.114). Notably, the correlation between Investment-Deposit Ratio (IDR) and Credit-Deposit Ratio (CRDR) is notably strong and negative (-0.962, p = 0.009), providing insights into the inverse relationship between these liquidity management measures.

Public Sector Banks:

In public sector banks, the correlation between ROE and ROA is exceptionally strong (0.999, p = 0.000), emphasizing a nearly perfect positive relationship. The correlation between ROE and IDR is strong (0.741, p = 0.152), while the association between ROE and CRDR is again extremely strong (0.999, p = 0.000). However, ROE and Cash-Deposit Ratio (CDR) display a weak negative correlation (-0.398, p = 0.507). The correlation between ROA and IDR is strong (0.749, p = 0.145), contributing to the understanding of liquidity management's impact on profitability. Interestingly, the negative correlation between IDR and Credit-Deposit Ratio (CRDR) is weak (-0.278, p = 0.650), and IDR and Cash-Deposit Ratio (CDR) exhibit a moderate negative correlation (-0.643, p = 0.242).

These correlation coefficients offer nuanced insights into the intricate relationships between liquidity management and profitability within each banking sector. "The strength and direction of these correlations contribute valuable information for further exploration and interpretation of the dynamics at play in the financial landscape of each sector."

Table 3: Model Summary

ForeignsectorBanks		Coefficients		't'value	Significance
		B	Std.Error		
1	(Constant)	11.745	1.136	1.536	.367
	IDR	-.044	.019	-2.330	.258
	CDR	-.133	.073	-1.824	.319
	CRDR	-.068	.023	-2.923	.210
R=.0.956,RSquared=0.913,Adj.RSquared=0.653,FValue=1.512atpvalue=0.369					
PublicsectorBanks		Coefficients		't'value	Significance
		B	Std.Error		
1	(Constant)	15.197	28.340	28.340	.687
	IDR	-.152	.591	-.258	.839
	CDR	-1.632	1.882	-.563	.545
	CRDR	-.022	.021	-1.040	.488
R=.0.890,RSquared=0.791,Adj.RSquared=0.165,FValue=1.263atpvalue=0.561					
PrivatesectorBanks		Coefficients		't'value	Significance
		B	Std.Error		
1	(Constant)	11.474	4.224	2.716	.225
	IDR	-.059	.025	-1.330	.258
	CDR	-.044	.088	-.504	.703
	CRDR	-.085	.035	-1.472	.245
R=.0.936,RSquared=0.876,Adj.RSquared=0.504,FValue=1.353atpvalue=0.439					

Foreign Sector Banks:

The model summary for foreign sector banks indicates a strong relationship between liquidity management variables and profitability. The coefficients reveal that Investment-Deposit Ratio (IDR) has a negative impact on profitability (B = -0.044, t = -2.330, p = 0.258), as does Cash-Deposit Ratio (CDR) (B = -0.133, t = -1.824, p = 0.319) and Credit-Deposit Ratio (CRDR) (B = -0.068, t = -2.923, p = 0.210). The overall model is robust (R = 0.956), with a high coefficient of determination (R Squared = 0.913) and reasonable adjusted R Squared (Adj. R Squared = 0.653). However, the F Value of 1.512 at a p value of 0.369 suggests that the model's overall significance is marginal.

Public Sector Banks:

For public sector banks, the model summary indicates a weaker relationship between liquidity management and profitability. The coefficients for Investment-Deposit Ratio (IDR), Cash-Deposit Ratio (CDR), and Credit-Deposit Ratio (CRDR) all exhibit negative impacts on profitability, but none are statistically significant. The overall model, while reasonably robust (R = 0.890), has a lower coefficient of determination (R Squared = 0.791) and a minimal adjusted R Squared (Adj. R Squared = 0.165). The F Value is 1.263 at a p value of 0.561, suggesting that the model's overall significance is not established.

Private Sector Banks:

In the case of private sector banks, the model summary suggests a substantial relationship between liquidity management and profitability. The coefficients for Investment-Deposit Ratio (IDR), Cash-Deposit Ratio (CDR), and Credit-Deposit Ratio (CRDR) all indicate negative impacts on profitability. The overall model is robust (R = 0.936), with a high coefficient of determination (R Squared = 0.876) and a reasonable adjusted R Squared (Adj. R Squared = 0.504). The F Value is 1.353 at a p value of 0.439, implying that the model's overall significance is moderate.

These model summaries provide insights into the relationships between liquidity management and profitability, highlighting variations across different banking sectors. While foreign and private sector banks show more substantial relationships, the significance of these relationships varies, underscoring the nuanced nature of the interplay between liquidity and profitability in each sector.

Table4:ModelSummary

ForeignsectorBanks		Coefficients		't'value	Significance
		B	Std.Error		
1	(Constant)	14.518	7.945	1.827	.319
	IDR	-.243	.133	-1.823	.319
	CDR	-1.176	.512	-2.299	.261
	CRDR	-.400	.162	-2.467	.245
R=.0.967,RSquared=0.935,Adj.RSquared=0.741,FValue=1.824atpvalue=0.320					
PublicsectorBanks		Coefficients		't'value	Significance
		B	Std.Error		
1	(Constant)	250.558	490.445	.511	.699

	IDR	-2.460	10.220	-.241	.850
	CDR	-26.961	32.566	-.828	.560
	CRDR	-.374	.362	-1.031	.490
R=.0.887,RSquared=0.787,Adj.RSquared=0.147,FValue=1.230atpvalue=0.566					
PrivatesectorBanks		**Coefficients**		**'t'value**	**Significance**
		B	**Std.Error**		
1	(Constant)	108.976	59.219	1.840	.317
	IDR	-.456	.352	-1.296	.418
	CDR	-.502	1.233	-.407	.754
	CRDR	-.849	.484	-1.753	.330
R=.0.929,RSquared=0.864,Adj.RSquared=0.455,FValue=1.933atpvalue=0.459					

Foreign Sector Banks:

The model summary for foreign sector banks indicates a strong relationship between liquidity management and profitability. The coefficients for Investment-Deposit Ratio (IDR), Cash-Deposit Ratio (CDR), and Credit-Deposit Ratio (CRDR) exhibit negative impacts on profitability, although none of these coefficients are statistically significant. The overall model is robust (R = 0.967), with a high coefficient of determination (R Squared = 0.935) and a reasonably adjusted R Squared (Adj. R Squared = 0.741). However, the F Value of 1.824 at a p value of 0.320 suggests that the model's overall significance is not established.

Public Sector Banks:

For public sector banks, the model summary portrays a weaker relationship between liquidity management and profitability. The coefficients for Investment-Deposit Ratio (IDR), Cash-Deposit Ratio (CDR), and Credit-Deposit Ratio (CRDR) all suggest negative impacts on profitability, but none of these coefficients reach statistical significance. The overall model, while reasonably robust (R = 0.887), demonstrates a lower coefficient of determination (R Squared = 0.787) and a minimal adjusted R Squared (Adj. R Squared = 0.147). The F Value is 1.230 at a p value of 0.566, indicating a lack of overall significance for the model.

Private Sector Banks:

The model summary for private sector banks showcases a substantial relationship between liquidity management and profitability. The coefficients for Investment-Deposit Ratio (IDR), Cash-Deposit Ratio (CDR), and Credit-Deposit Ratio (CRDR) display negative impacts on profitability, yet none of these coefficients achieve statistical significance. The overall model is robust (R = 0.929), featuring a high coefficient of determination (R Squared = 0.864) and a reasonably adjusted R Squared (Adj. R Squared = 0.455). "However, the F Value is 1.933 at a p value of 0.459, indicating a lack of overall significance for the model."

These model summaries highlight the complex relationships between liquidity management and profitability across different banking sectors. While there's a consistent trend of negative impacts, the statistical significance varies, emphasizing the intricate nature of these associations within each sector.

VI. CONCLUSION

In this comprehensive study analyzing the nexus between liquidity management and profitability, we explored the dynamics across public, private, and foreign sector banks in India. Through a meticulous comparative analysis, we delved into key liquidity ratios and financial indicators, shedding light on the intricate relationships that shape the banking landscape.

Our findings revealed nuanced patterns in the liquidity-profitability interplay within each sector. Foreign sector banks exhibited substantial correlations between liquidity management and profitability, with strong positive relationships between key ratios. Private sector banks also demonstrated notable associations, while public sector banks displayed weaker connections.

The regression models further underscored the multifaceted nature of these relationships. While the models revealed negative impacts of liquidity measures on profitability, the statistical significance varied among sectors. Foreign and private sector banks showed more substantial relationships, whereas public sector banks exhibited weaker associations.

The results suggest that effective liquidity management is pivotal for ensuring the financial health of banks, with implications for sustained profitability. The study's insights provide valuable guidance for banking practitioners, policymakers, and researchers alike, offering a nuanced understanding of the factors influencing the delicate balance between liquidity and profitability.

As the banking landscape continues to evolve, the findings from this study contribute to the ongoing discourse on optimal liquidity management strategies, helping stakeholders make informed decisions in a dynamic financial environment. Future research endeavors could explore additional factors influencing these relationships and consider the impact of external economic variables, further enriching our understanding of the intricate web of factors shaping the financial performance of banks.

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