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A Study on Sustainability in the Firm Value of Banking Business: An Interaction of Financial Attributes and Risk Governance

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ABSTRACT

Purpose Of the Study: Evolution of the business environment has forced the financial institutions to turn around and change their own business models in order to retain their loyal customer base. The commercial banks have certainly faced their own fair share of challenges when they had to introduce innovations in their products and processes and simultaneously strengthen their financial health with sustained risk governance techniques and decisions. Thus, the purpose of the study is to understand the importance of sustainability of firm value for a banking business, and how financial attributes and risk governance factors can impact the farm valuation of Indian commercial banks.

A Brief Literature Review: Over the years authors have tried studying the relation between firm value and various financial attributes. In certain instances, risk governance techniques like the capital adequacy ratio have also been introduced in various studies. In a study, the author tried to study the relationship between financial risks and firm value and examine the moderating effect that capital adequacy has on the relationship between financial risk and firm value. The results of the study indicated that a higher capital adequacy ratio increases form value and has a moderating effect on financial risk and firm value (Jagirani et al., 2023). Similarly, certain authors over the years have also tried to find out the effectiveness of Risk Committee on the financial success of certain quoted banks in African countries. (Odubuasi et al., 2022) focused specifically on risk committee diligence committee composition committee diversity, committee expertise, committee size and return on equity of the country's selected from Africa. The fixed effect model employed by them reported that the impact of the diligence and composition of risk committee on bank performance in certain African countries was highly significant. Thus, they concluded that risk committee effectiveness, its diligence, its composition and various leverage factors should be pivotal in the formulation of risk management committee of various organisations, and especially banks.

The Methodology Adopted: Content analysis and panel data has been employed in the study to understand the implications of the financial attributes and risk governance factors on the sustainability in the firm value of Indian commercial banks. Financial attributes like Net Interest Margin, Cash Deposit ratio, Volume of digital transactions, etc. and risk governance attributes like the presence of a chief risk officer, the activism of the risk committee, etc. have been used in the study. Tobin's Q has been taken as the proxy of firm value in the study as well. The hierarchical regression analysis has been the economic modelling technique used in the study to achieve the study purpose.

Study Hypothesis: Since hierarchical regression modelling has been used in the study, the aim of the study is to assess whether the overall model of firm value of the banking business gets better with the gradual introduction of certain financial attributes variables and risk governance variables or not. Accordingly, with each step and introduction of certain attributes and variables into the model, research hypothesis in the study has been developed.

Results & Findings: The study is an attempt at introducing a functional model with some significant financial ratios, some crucial ratios that define the characteristics of the bank and the risk governance framework with the firm value. The logic behind using the Tobin's Q as a proxy of firm value is that unlike several other financial ratios that solely focus on the book value of the variables; the Q ratio takes the market capitalization value of the banks into account in the study. Through the study, almost all the explanatory variables like CDR, ROE, ROA etc. showed a positive and significant relationship with firm value in the first 2 models whereas on the other hand, introducing risk governance in the third model made it too complicated. As a result, the model was proven insignificant and unproductive unlike the first 2 models.

Limitations: There is a lot of scope for further research on this particular subject as the model could be developed in a lot of ways to explain how different variables may it be financial ratios, risk governance or financial innovativeness rating etc. could impact the firm value which in turn impacts the managerial decision making of senior executives and the economy as a whole and further help in making the banking business is sustainable.

Implications: The study gives us a glimpse of certain financial attributes and various risk governance factors that could be used to maintain and sustain the firm value of commercial banks in India. It is certainly essential to focus on the

sustainability of firm value of commercial banks, for the reason that banks are the lifeblood of an economy and help act as the mediating factor between deposits, savings and investment in the economy.
Key Words: Financial Attributes, Risk Governance, Firm value, Indian Commercial Banks, Innovation

1.0 INTRODUCTION

With the business world changing too quickly, the financial firms and institutions have to keep up by updating their business models again and again. This motion involves rolling out new products and streamlining day-to-day operations while also safeguarding their bottom line through disciplined risk management and clear-eyed strategic choices. Banks being at the centre of the financial eco-system and being responsible for funnelling the savings and deposits into loans and investments, their health is crucial for everyone else in the economy. This goes beyond being a boardroom goal; it is something the whole system depends on for stability and growth **(Saksonova, 2014)**.

A firm's value directly reflects the financial health as well as the efficiency with which the management carries out its responsibilities towards the shareholders. Simply securing their wealth is hence not enough. Studies have thus, rightfully shown that it is equally important to manage the investment and its cost, which in turn reflects on the firm value **(Hayes, 2024)**. Financial ratios act as crucial instruments for the stakeholders in this scenario. Besides being of assistance in in evaluating and interpreting financial statements, they also serve as various benchmarks to effectively assess and manage the financial performance of enterprise. Return on Asset (ROA) and Return on Equity (ROE) are two such primary examples of ratios.

Banks play a crucial role towards economic growth and development by acting as an effective financial intermediary. They, thus, have to be especially careful in minimizing the risk of their bankruptcy and exercise greater caution in managing their funds. Proper management of equity and debt, along with maintaining an appropriate capital structure, can significantly influence the management of assets in advances. It will also decrease the proportion of non-performing assets within commercial banks. Hence, monitoring their lending in correspondence with their deposits is vital not only for profitability but also liquidity and overall financial stability (**Das and Uppal, 2021)**. Lending excessively risks banks not having sufficient capital to protect against insolvency; and conversely, holding too many deposits result in potential loss of income as well as investment opportunities due to asset blockage.

At the same time, it is also vital that banks keep an eye out for non-performing assets (NPAs) as efficiently managing NPAs is another aspect that is central to performance management of banks. A noticeable rise in NPAs means a higher likelihood of credit default suggesting a decline in the firm's health. In light of such developments, numerous studies have explored the relationship between the capital credit-deposit ratio and return on assets, return on equity, net interest margin, Net Advances to Net NPAs ratio as well as various other risk governance aspects (**Ramchandani and Jethwani, 2017)**.

Thus, the increasingly complex and dynamic risks faced by the modern banks today due to technological advancements, policy framework changes and globalization means a deeper scrutiny into what are the variables and factors that impact the firm value of commercial banks in India and make it sustainable in the long run.

2.0 LITERATURE REVIEW

Firm value is arguably the single most important indicator of a company's overall health, as it charts market capitalization and, when present, signals the quality of corporate governance. It is a live barometer of investor trust and public sentiment. After the 2007-08 financial crisis provided a dramatic proof of the link, the episode pressed institution- financial and others alike to move risk management from the shadows of compliance work into the spotlight of strategic planning. It is of no surprise that today, the debate and many of the research works revolve around how solid corporate governance; especially the risk attribute can protect, and lift firm value over the long haul- particularly for large banks. Thus, many scholars and practitioners now read post-crisis finance through the lens of risk-as-value driver rather than risk-as-cost, marking a decisive shift in the field.

2.1 Tobin's Q as a proxy for firm value

Tobin's Q has gained reputation as a robust measure of firm value because, being market based, it captures real time investor moods and reactions as compared to other conventional accounting ratios. To explain it in a very straightforward manner,

Q compares a company's market worth, especially its equity, to what it would cost to replace all its physical and intangible assets. The answer shows, whether the shares look overvalued (Q≥1), undervalued (Q≤1) or just right (Q=1). A strong Q does more than flag valuation; it suggests investors trust the bank's ability to earn profits down the road and keep risks in check, helping the system stay stable **(Hayes, 2024)**. For a bank, especially, it gives a broader picture than that of balance-sheet numbers alone and is more of a moving indicator of market expectations. Leaning only on backward-looking book values risks postponing the corrections that a struggling bank really needs. Using Tobin's Q to gauge sustainability in firm value is therefore a sensible choice. Support for the banking application comes from **Begenau et al. (2025)**, whose framework explains why market and book equity can drift apart especially in crisis times when panic pricing churns the data. Their evidence shows that Q foreshadows future returns, hinting that regulators might use its signals to speed or slow the rate at which losses hit the books. Overall, the insight that regulating by adjusting recognition timing could soften worst-case scenarios speaks to the delicate trade-offs all financial overseers face.

2.2 Proxies of Financial attributes, firm characteristics and risk governance of banks

Researchers have looked at how Net Interest Margin (NIM) affects the value of banks. In such a study, **Jagirani et al. (2023),** found a strong negative link between NIM and firm value; where the results implied a lower NIM meant that the investment returns were not enough to cover interest costs, which suggests that the assets weren't being used efficiently. **Ramchandani and Jethwani (2017)** also found there to be a moderate negative relationship between the Credit-deposit Ratio (CDR) and NIM in Indian banks. **Saksonova (2014)** on the other hand, talked about the way NIM improves asset structure and checks up on the stability and efficiency of operations. Hence, while some studies show NIM having a positive impact on firm value, other studies show that it has a negative or a more complicated effect, which involve trade-offs or certain factors in the situation.

The Credit-Deposit Ratio (CDR) shows how much of a bank's total deposits are used for lending. According to a study by **Ramchandani and Jethwani (2017),** there is a substantial positive link between CDR and profits of Indian commercial banks in particular, especially, interest income. It means more deposits going to loans, means more money coming in. **Khan & J (2025),** on the other hand, saw a moderate negative relationship between Return on Equity (ROE) and NIM, which could mean that aggressive lending comes with trade-offs or higher liquidity concerns; which makes sense when we think about the dangers involved.

Return on Equity (ROE) and Return on Assets (ROA) are again two well-known ways to determine how profitable a business is and how well it runs. **Erin et al. (2020)** and **Odubuasi et al. (2022)** found a strong positive link between ROE, ROA and company value. This means that firms with higher profits tend to have higher values. Many studies, especially those on African banks, use these variables to show how well a company is doing financially **(Odubuasi et al., 2022)**.

Non-Performing Loans (NPL) are always one of the most important things that affect a company's worth. **Jagirani et al. (2023)** identified a strong negative link between NPLs and firm value of Pakistani banks. That said, a greater NPL ratio might make the bank less profitable. **Das and Uppal (2021)** also did a lot of research on how NPAs affected the profits of Indian commercial banks between 2005 and 2019. Their research clearly showed that more NPAs hurt banks' profits. Many studies have demonstrated for banks to focus on lowering NPAs and operating costs to be more profitable **(Das & Uppal, 2021; Dsouza et al., 2022)**. **Haque & Wani (2015)** also backed this argument by showing that Credit Risk, which includes NPLs, was statistically significant and hurt the financial performance of Indian commercial banks.

The constant focus on high NPAs and how they affect public sector banks more than other types of banks shows that NPAs are not merely a financial measure, but a serious systemic problem in the Indian banking system. This systemic weakness means that any research on the value and long-term viability of Indian banks must take into account the widespread impact of asset quality. Managing NPAs well is not only a good financial practice, but also a significant factor in long-term sustainability and a key aspect that any model of firm value for Indian banks has to take into account for implementing stronger policies and strategies.

The Capital Adequacy Ratio (CAR) is very important to banks in two ways. **Jagirani et al. (2023)** gave convincing proof that a higher CAR directly raises the value of a company and, even more critically, changes the link between financial risks and firm value. This moderating effect means that having enough capital buffers can lessen the bad effects of several financial risks, such as NPLs, market, liquidity and operational risks. This is a clear cause-effect relationship in which having enough capital functions as a strong buffer, making banks better able to handle bad financial shocks. This strength leads to more trust in the market, which in turn raises the value of the company.

Hans (2017) talked about how Basel Norms, which set rules for capital adequacy, have helped the Indian banking system. Indian banks that follow these rules are said to have made more money and had better assets. **Gaikwad & Hastak (2017),**

concluded that Basel III, in particular, added capital conservation buffers to make sure that banks build up capital during times of low financial stress, which makes them more resilient. The Basel rules have had a good effect on Indian banks, which shows that strong capital frameworks are important for both financial stability and long-term business value. **Haque & Wani (2015)** studied Indian banks and found that capital adequacy had no effect on profitability. This is a major difference in the results. This difference from mostly good results in other studies shows that this is a possible subject for more research.

Risk governance includes s number of systems and processes that are meant to keep an eye on and control a bank's risk exposures. It is important for financial stability and performance that it works. **Tara and Sadri (2015)** stressed the link between risk management and corporate governance in India, saying that strong corporate governance is the way to control corporate risk. Risk management involves bigger corporate governance systems. Their work showed how important it is to hold people accountable in other to protect the interests of financing providers and lowering company risk. **Guluma (2021)** looked at how larger CG indicators affect how well a company does. There was a strong positive link between ownership concerntration and product market rivalry with ROA and Tobin's Q. On the other hand dual leader ship and debt financing had negative links with Tobin's Q.

The goal of Enterprise Risk Management (ERM) is to give a complete and all-encompassing way to handle risk. **Dhar (2013)** looked into how into ERM in Indian banks and found that most of their risk management practices were based on "compliance" rather than "strategy". This means that, the focus is on fulfilling regulatory obligations rather than integrating risk a part of the main business strategy. Hence, the author called out to think ERM in broader terms, rather than just checking off regulatory boxes; which should be the bank's fundamental business model for better strategy and value creation.

There have been different empirical findings about how well risk committees work as a critical part of risk governance to deal with the deeper and more nuanced issues that really affect the value of banks. **Odubuasi et al. (2022)** looked into how risk committee effectiveness affects the financial success (ROE) of publicly traded banks in Nigeria, South Africa and Ghana. Their results showed that the relationships were not simple- (a) The diligence of the Risk Committee, assessed by how often meetings were held, had a negative and statistically significant effect on ROE; suggesting that more meetings led to an unexpected drop In the earnings. (b) On the other hand, the composition of the risk committee, especially the number of independent directors had a positive and statistically significant effect on ROE. Even though the size of Risk Committee and competence were good, they didn't have a statistically significant effect on ROE. Thus, it was concluded that the Risk Committee diligence, composition and leverage considerations should be very important when making risk management committees.

Elamer and Benyazid (2018) found that different risk committee features like presence, size, independence and meeting frequency; were negatively related to financial performance- ROA and ROE in UK financial institutions. They said that creating strong risk committees might make it harder for the management to take too many risks which could hurt short-term financial performance. This discovery goes against the very popular belief that, more governance always leads to better results. It was concluded that too much conservative oversight, or too much vigilance, could inhibit new ideas or profitable risk taking, which would causeway poor performance. Hence, the crucial point to be noted here was that the quality and strategic alignment of risk governance are more essential than how often or how many times it happens.

Having an active Chief Risk Officer (CRO) and board risk committee for key risk oversight roles is very important. **Erin et al. (2020)** discovered that having a CRO and an active Risk committee has a big beneficial effect on ROA of companies in Nigeria's banking sector. The other plus point here, was that the major composition of risk committee was independent. On the other hand, they also discovered that the size of the risk committee was linked to worse financial performance, which means that bigger committees might not always lead to better results.

Abid et al. (2021) looked into how the traits of risk committees and chief risk officers affect how much risk Asian commercial banks are willing to take. They found a strong and negative connection between risk governance procedures and risk taking. This was found to be especially true for privately owned banks, compared to state owned banks or public sector banks. The risk governance also had a beneficial effect on the performance of privately owned banks, but no impact on the performance of public sector banks. Another study done by **Nguyen and Dang (2022)** showed that the structure of risk governance and how well it works are both linked to how well overall risk management works in ASEAN banks; especially, when it comes to managing insolvency, credit and operational risks. Their study showed that risk governance had a big but bad effect on credit and liquidity risk; whereas a small but good effect on operational risk. This shows that different risks are impacted differently.

Table 1 below gives an overview of some important proxies chosen of financial, firm and risk governance attributes and they have been shown to affect firm values in some key studies taken into consideration.

TABLE 1

Proxies of different variables	**Definition**	**Observed Impact on Firm Value/Performance**	**Key Studies**
Net Interest Margin (NIM)	Measures the difference between interest income and interest expense relative to interest-earning assets.	Negative and significant relationship with firm value; moderate negative correlation with CDR; negative impact from cost-to-income ratio.	Jagirani et al., 2023; Ramchandani & Jethwani, 2017; Das & Uppal, 2021
Credit Deposit Ratio (CDR)	Proportion of total deposits utilized for lending.	Strong positive correlation with interest income; moderate negative correlation with ROE and NIM.	Ramchandani & Jethwani, 2017
Non-Performing Loans (NPLs)	Loans or advances that have ceased generating income due to borrower default.	Significant negative relationship with firm value and profitability; systemic issue in Indian banking.	Jagirani et al., 2023; Das & Uppal, 2021; Haque & Wani, 2015
Return on Equity (ROE)	Measures the rate of return on the ownership interest of the common stock owners.	Positive and significant relationship with firm value (in initial models of current study).	Odubuasi et al., 2022
Capital Adequacy Ratio (CAR)	Measures a bank's capital in relation to its risk-weighted assets.	Increases firm value; moderates negative relationship between financial risks and firm value. Generally positive impact from Basel norms.	Jagirani et al., 2023; Hans, 2017
Return on Assets (ROA)	Measures how efficiently a company is using its assets to generate earnings.	Positive and significant relationship with firm value (in initial models of current study).	Erin et al., 2020
Enterprise Risk Management (ERM)	Holistic approach to identifying, assessing,	Primarily compliance-driven, not strategy-	Dhar, 2013

	and managing risks across an organization.	driven, in Indian banks; needs strategic shift.	
Risk Committee Diligence (Meeting Frequency)	Number of meetings held by the risk committee.	Inverse and statistically significant effect on ROE (higher meetings = lower ROE).	Odubuasi et al., 2022
Risk Committee Composition (Independent Directors)	Proportion of independent directors on the risk committee.	Positive and statistically significant effect on ROE.	Odubuasi et al., 2022
Risk Committee Size	Number of members on the risk committee.	Positive but not statistically significant effect on ROE in some studies; negative association with financial performance in others.	Odubuasi et al., 2022; Erin et al., 2020; Elamer & Benyazid, 2018
Risk Committee Expertise	Presence of members with specific expertise (e.g., accounting).	Positive but not statistically significant effect on ROE.	Odubuasi et al., 2022
Chief Risk Officer (CRO) Presence	Existence and effectiveness of a dedicated Chief Risk Officer.	Significant and positive impact on financial performance.	Erin et al., 2020
Board Risk Committee Activism	Active engagement of the board risk committee.	Significant and positive impact on financial performance.	Erin et al., 2020
Board Risk Committee Independence	Inclusion of independent directors in the risk committee.	Significant and positive impact on financial performance; negative relationship with financial performance in some studies.	Erin et al., 2020; Elamer & Benyazid, 2018
Ownership Structure (as a moderator)	Distinction between privately-owned and state-owned banks.	Risk governance positively influences performance of POBs but has no impact on SOBs.	Abid et al., 2021
Source: Authors' re-collection			

The relationships between financial characteristics risk management and firm value are complicated and need to be studied in greater depth. The study done by **Jagirani et al. (2023)** show that Capital Adequacy Ratio (CAR) has a moderating effect, where a higher CAR not only directly increases the firm value, but also lessens the negative effects of other financial

risks, such as Non-Performing Loans and market risk. The study suggested that having enough capital acts as a buffer, making a firm more resilient to financial shocks and increasing market confidence, which in turn raises the value of the company.

There, on the other hand, adding risk governance to financial performance models showed that the relationship is very rarely linear and quite complicated. Generally, analysis show that adding risk governance makes the model useless, which would suggest that the link between risk governance and firm value might not be straight and would depend on a number of different factors. This is in line with the previous studies, that were already discussed about risk committees, where they occasionally have bad effects or no effect on financial performance, depending upon the situation. For ex: Risk governance variables could be multicollinear, meaning that they affect each other. Another possibility is endogeneity, which means that governance responses are affected by current financial conditions. Finally, there are also other contextual considerations such as regulatory regimes and ownership arrangements to be taken into account.

Abid et al. (2021) make the story even more complicated by showing that risk governance procedures help privately own banks, but have no effect on public sector banks in Asia. This further goes to show that risk governance works depending on the situation and the ownership structure, which changes incentives and how actually things work within it. **Nguyen and Dang (2022)** also show that risk governance has different impact on different categories of risk, meaning the consequences of governance depends on the type of risk involved.

All of these results show that future models need to take into account ownership structure and other aspects in order to effectively measure the link between risk governance and firm value.

3.0 RESEARCH GAP

The Indian banking sector has its own set of problems that have a big effect on the value and long-term viability of companies. These problems include lower efficiency lower earnings and a high number of non-performing assets. NPAs have a big effect on public sector banks, since they show problems with the banking system as a whole **(Dhar, 2013)**. These banks' risk management procedures are generally based on compliance, which makes them less effective at creating value They need to switch to a more strategic approach to enterprise risk management. Corporate governance is also very important for reducing risks, which shows how important it is to have strong accountability systems **(Tara & Sadri, 2015)**. The Basel Criteria have changed the rules for Indian banks and Basel I and II have helped them make more money and improve the quality of their assets. However, Basel III's strict capital requirements are very hard to meet, especially for public sector banks that already have a lot of NPAs **(Hans, 2017)**. This strange situation in the rule shows that Banks need to find ways to make their operations as efficient as possible while still making money.

When we look at the financial aspects of Indian commercial banks, we find that they're very complicated. For example, the credit-deposit ratio has a positive relationship with interest income, but a negative relationship with Return on Equity and Net Interest Margin **(Ramchandani & Jethwani, 2017)**. Also credit risk has a big effect on financial performance, while the effects of liquidity and interest rate concerns are still unclear **(Haque & Wani, 2015)**.

A review of the literature showed that there is agreement on the relevance of Tobin's queue as a market based measure of farm value and that non-performing loans hurt profitability **Begenau et al. (2025)**. The link between a company's financial characteristics and its value is not always clear. And different studies have shown different things about how well risk governance methods work **(Abid et al., 2021)**.

The current study finds important gaps in the data, especially when it comes to the non-linear and context specific Effects of risk governance on farm value This suggests that current models may not fully capture these interactions.

The goal of the study here is to create a more comprehensive model That takes into account how important financial measures and risk governance variables are changing the firm value of a bank. This will help deal with the issues that have been found in the literature. This method aims to improve our understanding of how risk governance, financial factors and firm value interact in the Indian banking sector, especially as risk management methods are often driven by compliance **(Dhar, 2013)**.

4.0 OBJECTIVES OF THE STUDY

[1] To assess the impact of financial attributes on the firm valuation of Indian commercial banks.
[2] To investigate the impact of firm characteristics on the firm valuation of Indian commercial banks.
[3] To assess the impact of risk governance attributes on the firm valuation of Indian commercial banks.
[4] To examine if the overall firm value model improves with the gradual introduction of the different variables
[5] To understand the importance of sustainability in the firm value of banking business.

5.0 RESEARCH METHODOLOGY

- The study focuses on the performance of two significant commercial banks in India, one of which is a public sector bank (SBI), and the other of which is a private sector bank (ICICI).
- During a period of ten years, beginning in 2012-13 and ending in 2021-22, a quantitative strategy that makes use of information extraction from annual reports of banks and panel data is utilized in this study. 280 observations are drawn from it.
- In order to construct a face wise framework of controllable variable with the independent variables, the research makes use of hierarchical regression analysis. This framework enables the comparison of different models.
- In this study, the dependent variable is Tobin's Q, which acts as a stand in for the worth of the firm.
- The firm health or financial attributes, the features or characteristics of the firm and the aspects of risk governance are all independent variables.
- For the purpose of determining whether or not relationships in incrementally complicated models are significant, the study employs three primary hypotheses. They are as follows:

H_{01}: The relationship between financial attributes and firm value of commercial banks is insignificant.
H_{11}: The relationship between financial attributes and firm value of commercial banks is significant.
H_{02}: The relationship between financial attributes, firm characteristics and firm value of commercial banks is insignificant.
H_{12}: The relationship between financial attributes, firm characteristics and firm value of commercial banks is significant.
H_{03}: The relationship between financial attributes, firm characteristics, risk governance attributes and firm value of commercial banks is insignificant.
H_{13}: The relationship between financial attributes, firm characteristics, risk governance attributes and firm value of commercial banks is significant.

- The Durbin-Watson Test, ANOVA, VIF, and Collinearity Statistics are some examples of the statistical methods that are utilized. Descriptive statistics are utilized to provide a description of the variables, and regression analysis is performed with them.
- The purpose of this study is to gain an understanding of the factors that influence the behavior of these institutions and the risk management measures that they employ.
- Given below, are the successive models with their connotations employed in the study:

MODEL 1
The econometric model of firm health and firm value is expressed as follows:
Model 1 where;

Tobin's Q (TOB_Q) – proxy for firm's value

FH_CD – Credit Deposit Ratio (%)
FH_NIM – Net Interest Margin (%)
FH_ROE – Return On Equity (%)
FH_NPA_ADV – Net NPA to Net Advances Ratio (%)

MODEL 2
The second econometric model takes the firm health, firm characteristics and firm value into account.
Model 2 where:

Tobin's Q (TOB_Q) – proxy for firm's value

FH_CD – Credit Deposit Ratio (%)
FH_NIM – Net Interest Margin (%)
FH_ROE – Return On Equity (%)

FH_NPA_ADV – Net NPA to Net Advances Ratio (%)

FC_FS – Firm Size (log value of total assets)
FC_ROA – Return On Assets (%)
FC_CAR – Capital Adequacy Ratio (%)

MODEL 3
This econometric model takes all the control variables and the firm value into account.
Model 3 where:

Tobin's Q (TOB_Q) – proxy for firm's value

FH_CD – Credit Deposit Ratio (%)
FH_NIM – Net Interest Margin (%)
FH_ROE – Return On Equity (%)
FH_NPA_ADV – Net NPA to Net Advances Ratio (%)

FC_FS – Firm Size (log value of total assets)
FC_ROA – Return On Assets (%)
FC_CAR – Capital Adequacy Ratio (%)

RG_CRO_PR – Presence Of Chief Risk Officer
RG_RC_PR – Presence Of Risk Committee
RG_RC_S – Size Of Risk Committee
RG_RC_ACT – Activism Of Risk Committee
RG_CRO_IND – Independence Of CRO (dummy variable)
RG_RC_IND – Independence Of Risk Committee

6.0 ANALYSIS AND INTERPRETATION

6.1 ANALYSIS OF DATA

Table 2 presents the descriptive statistics of all the variables of the study. The result of hierarchical regression analysis has been presented in 3 tables – **Table 3** which is the model summary of R square and adjusted R square, **Table 4** which gives the ANOVA statistics which gives the significance of the model and **Table 5** which helps us give shape to the model through actual regression equation.

TABLE 2

Statistics

		TOB_Q	FH_CD	FH_NIM	FH_ROE	FH_NPA_ADV	FC_FS	FC_ROA	FC_CAR	RG_CRO_PR	RG_RC_PR	RG_RC_S	RG_RC_ACT	RG_CRO_IND	RG_RC_IND
N	Valid	20	20	20	20	20	20	20	20	20	20	20	20	20	20
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.03819	85.02800	2.85550	9.03600	2.54350	30.38126	0.90200	15.33650	1.00000	1.00000	6.00000	6.60000	1.00000	0.68200
Median		1.02224	84.13500	2.88500	10.18000	2.17500	30.33015	0.74500	14.97000	1.00000	1.00000	6.50000	7.00000	1.00000	0.67000
Mode		.912[a]	66.540[a]	2.910[a]	-3.210[a]	5.430	29.311[a]	-.190[a]	12.000[a]	1.000	1.000	7.000	7.000	1.000	0.670
Std. Deviation		0.087504	11.968802	0.318194	4.924831	1.561771	0.724612	0.620752	2.584780	0.000000	0.000000	1.806421	2.186080	0.000000	0.045143
Variance		0.008	143.252	0.101	24.254	2.439	0.525	0.385	6.681	0.000	0.000	3.263	4.779	0.000	0.002
Range		0.325	40.640	1.160	18.640	4.960	2.230	2.050	7.160	0.000	0.000	5.000	9.000	0.000	0.200
Minimum		0.912	66.540	2.430	-3.210	0.770	29.311	-0.190	12.000	1.000	1.000	3.000	4.000	1.000	0.630
Maximum		1.236	107.180	3.590	15.430	5.730	31.541	1.860	19.160	1.000	1.000	8.000	13.000	1.000	0.830
Sum		20.764	1700.560	57.110	180.720	50.870	607.625	18.040	306.730	20.000	20.000	120.000	132.000	20.000	13.640

a. Multiple modes exist. The smallest value is shown

Source: SPSS Output

TABLE 3

Model 1- Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.765[a]	0.585	0.475	0.063423	1.827

a. Predictors: (Constant), FH_NPA_ADV, FH_CD, FH_NIM, FH_ROE

b. Dependent Variable: TOB_Q

Model 2- Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.886[a]	0.785	0.659	0.051101	2.728

a. Predictors: (Constant), FC_CAR, FH_NPA_ADV, FH_CD, FH_NIM,

b. Dependent Variable: TOB_Q

Model 3- Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.912[a]	0.832	0.645	0.052110	2.949

a. Predictors: (Constant), RG_RC_IND, RG_RC_ACT, FH_ROE,

b. Dependent Variable: TOB_Q

Source: SPSS Output

TABLE 4

MODEL 1- ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.085	4	0.021	5.292	.007[b]
	Residual	0.060	15	0.004		
	Total	0.145	19			

a. Dependent Variable: TOB_Q

b. Predictors: (Constant), FH_NPA_ADV, FH_CD, FH_NIM, FH_ROE

MODEL 2- ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.114	7	0.016	6.244	.003[b]
	Residual	0.031	12	0.003		
	Total	0.145	19			

a. Dependent Variable: TOB_Q

b. Predictors: (Constant), FC_CAR, FH_NPA_ADV, FH_CD, FH_NIM, FH_ROE, FC_ROA, FC_FS

MODEL 3- ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.121	10	0.012	4.458	.017[b]
	Residual	0.024	9	0.003		
	Total	0.145	19			

a. Dependent Variable: TOB_Q

b. Predictors: (Constant), RG_RC_IND, RG_RC_ACT, FH_ROE, RG_RC_S, FH_NPA_ADV, FH_CD, FH_NIM, FC_CAR, FC_ROA, FC_FS

Source: SPSS Output

TABLE 5

MODEL 1- Coefficients

Model				Standardized Coefficients	t	Sig.	Confidence Interval for B		Collinearity Statistics	
				Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	0.503	0.169		2.979	0.009	0.143	0.863		
	FH_CD	-0.002	0.002	-0.291	-1.417	0.177	-0.005	0.001	0.656	1.525
	FH_NIM	0.266	0.058	0.967	4.546	0.000	0.141	0.390	0.612	1.635
	FH_ROE	-0.006	0.005	-0.344	-1.305	0.211	-0.016	0.004	0.398	2.515
	FH_NPA_ADV	0.005	0.013	0.085	0.379	0.710	-0.022	0.032	0.548	1.825

a. Dependent Variable: TOB_Q

MODEL 2- Coefficients

Model				Standardized Coefficients	t	Sig.	Confidence Interval for B		Collinearity Statistics	
				Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-6.942	3.224		-2.153	0.052	-13.967	0.084		
	FH_CD	0.006	0.005	0.885	1.433	0.177	-0.003	0.016	0.047	21.224
	FH_NIM	0.264	0.059	0.961	4.446	0.001	0.135	0.394	0.384	2.604
	FH_ROE	-0.002	0.007	-0.105	-0.255	0.803	-0.018	0.014	0.106	9.455
	FH_NPA_ADV	0.006	0.010	0.111	0.611	0.553	-0.016	0.028	0.543	1.840
	FC_FS	0.201	0.087	1.666	2.317	0.039	0.012	0.390	0.035	28.806
	FC_ROA	-0.083	0.094	-0.587	-0.882	0.395	-0.287	0.122	0.040	24.704
	FC_CAR	0.042	0.015	1.227	2.736	0.018	0.008	0.075	0.089	11.204

a. Dependent Variable: TOB_Q

MODEL 3- Coefficients

Model				Standardized Coefficients	t	Sig.	Confidence Interval for B		Collinearity Statistics	
				Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-9.247	4.037		-2.291	0.048	-18.380	-0.115		
	FH_CD	0.010	0.006	1.316	1.715	0.121	-0.003	0.022	0.032	31.560
	FH_NIM	0.262	0.109	0.954	2.413	0.039	0.016	0.508	0.119	8.377
	FH_ROE	-0.002	0.008	-0.097	-0.223	0.828	-0.019	0.016	0.099	10.138
	FH_NPA_ADV	0.007	0.011	0.127	0.632	0.543	-0.018	0.032	0.465	2.149
	FC_FS	0.280	0.116	2.321	2.424	0.038	0.019	0.542	0.020	49.113
	FC_ROA	-0.052	0.108	-0.366	-0.480	0.643	-0.295	0.192	0.032	31.190
	FC_CAR	0.052	0.025	1.530	2.050	0.071	-0.005	0.109	0.034	29.848
	RG_RC_S	-0.012	0.024	-0.246	-0.506	0.625	-0.065	0.041	0.079	12.710
	RG_RC_ACT	-0.014	0.015	-0.362	-0.970	0.357	-0.048	0.019	0.134	7.445
	RG_RC_IND	-0.557	0.418	-0.287	-1.333	0.215	-1.503	0.389	0.401	2.491

a. Dependent Variable: TOB_Q

Source: SPSS Output

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6.2 INTERPRETATION OF DATA ANALYSIS

UNIVARIATE ANALYSIS

In **Table 1,** from the 'mean' data, it can be clearly discerned that in general credit is 85% of the deposits whereas the net margin interest margin stands at 2.85%. The ROE of both the banks taken together is 9.03% whereas the ratio of net NPA to net advances of SBI and ICICI taken together stands at 2.54%. The net NPA to net advances have also ranged from a minimum of 0.77% to a maximum of 5.73% which could be a cause for concern. The capital adequacy ratio is maintained at 15.33% over the years and the return on assets of both the banks over ten years is 0.9%. Similarly, taking the risk governance variables into account, it is noticed that throughout the years there has always been Chief Risk Officer (CRO) and Risk Committee (RC) in both the banks. There has always been an average of 6 members in the RC with the meetings been held on an average of nearly 7 times a year. The RC meetings of both the banks taken together where held a minimum of 4 times a year and a maximum of 13 times a year. All the CROs have been independent directors during the tenures at the banks; whereas 68.2% members of the RC have been composed of independent directors. The Tobin's Q ratio has been the perfect one from which we can decipher that there are no unrecorded assets that could reflect on the market value of the firm. Though the Tobin's Q has been a perfect 1, it has ranged from a minimum of 0.912 to a maximum of 1.236 that could hint at unrecorded assets playing at market value. Thus, the table 2 gives a second account of firm health, firm characteristics as well as risk governance variables.

MULTIVARIATE ANALYSIS AND INTERPRETATION

The result of hierarchical regression analysis has been presented in 3 tables – Table 3 which is the model summary of R square and adjusted R square, Table 4 which gives the ANOVA statistics which gives the significance of the model and Table 5 which helps us give shape to the model through actual regression equation.

H_{01}: The relationship between financial attributes and firm value of commercial banks is insignificant.

Given below in the Model 1of tables 3, 4 and 5; the R square and adjusted R square are respectively 0.585 and 0.475. This means that firm health explains 47.5 % of the variation in the firm value. The Durbin-Watson value is 1.827 which means the variables are independent and positive correlation exists between them. Similarly, the p-value in ANOVA is 0.007 which is less than 0.05; it is safe to say that the model in this case is quite significant. In the coefficient table of Model 1, the FH_CD (0.177 > 0.05), FH_ROE (0.211 > 0.05) and FH_NPA_ADV (0.7170 > 0.05) showed an insignificant and negative relationship with the firm value. On the other hand, FH_NIM (0.000 < 0.05) showed a positive and significant relationship with the firm value. The regression equation goes as follows:

H_{02}: The relationship between financial attributes, firm characteristics and firm value of commercial banks is insignificant.

Given below in the Model 2 of tables 3, 4 and 5; the R square and adjusted R square are respectively 0.785 and 0.659. This means that firm health and firm characteristics explain 65.9 % of the variation in the firm value. The Durbin-Watson value is 2.728 which means the variables are independent and positive correlation exists between them. Similarly, the p-value in ANOVA is 0.003 which is less than 0.005; it is safe to say that the model in this case is quite significant. In the coefficient table of Model 2, the FH_CD (0.177 > 0.05), FH_ROE (0.803 > 0.05), FH_NPA_ADV (0.553 > 0.05) and FC_ROA (0.395 > 0.05) showed an insignificant and negative relationship with the firm value. On the other hand, FH_NIM (0.001 < 0.05), FC_FS (0.039 < 0.05) and FC_CAR (0.018 < 0.05) showed a positive and significant relationship with the firm value. The regression equation goes as follows:

H_{03}: The relationship between financial attributes, firm characteristics, risk governance attributes and firm value of commercial banks is insignificant.

Given below in the Model 3 of tables 3, 4 and 5; the R square and adjusted R square are respectively 0.832 and 0.645. This means that firm health, firm characteristics and risk governance explain 64.5 % of the variation in the firm value. This variance explanation is not better than that if the Model. 2 The Durbin-Watson value is 2.949 which means the variables are independent and positive correlation exists between them. Similarly, the p-value in ANOVA is 0.017 which is more than 0.005; it is safe to say that the model in this case is insignificant. In the coefficient table of Model 3, this model has already been proven insignificant except for FH_NIM and FC_FS, all the variables have negative and insignificant relationship with the firm value.

7.0 FINDINGS, CONCLUSION AND SUGGESTIONS

The study focuses on exploring the relationship between the firm health (CDR, NIM, ROE, Net NPA to Net Advances), firm characteristics (Firm size, ROA, CAR), risk governance (CRO presence, RC presence, size of RC, activism of RC, independence of CRO and independence of RC) and firm value (Tobin's Q has been used a proxy). The study explores the relation through a hierarchical regression model by introducing the controlled variables (FH, FC and RG) in a phase wise manner with the firm variable. The study analyzed the data of one public sector bank (SBI) and one private sector bank (ICICI) for the period of 2012-13 to 2021-22. Through the study, almost all the explanatory variables of FH and FC except for CD and ROE and ROA showed a positive and significant relationship of firm value in the first 2 models whereas on the other hand, introducing risk governance in the third model made it too complicated. As a result, the model was proven insignificant and unproductive unlike the first 2 models.

The study is an attempt at introducing a functional model with some significant financial ratios, some crucial ratios that define the characteristics of the bank and the risk governance framework with the firm value. The logic behind using the Tobin's Q as a proxy of firm value is that unlike several other financial ratios that solely focus on the book value of the variables; the Q ratio takes the market capitalization value of the SBI and ICICI banks into account in the study. There could be the several reasons why introduction of risk governance into the model made it more complicated. Since the linear regression runs on the assumption that the assumption of linear relationship, multi-variate normality, non-auto-correlation of errors and homoscedasticity; the non-fulfillment of any of these could have resulted in the failure of the model. Taking the collinearity statistics into account, though the VIF is less than 10 in Model 1; in Model 2 and Model 3 it being more than 10 could be explained by introduction of categorical variables.

There is a lot of scope for further research on this particular subject as the model could be developed in a lot of ways to explain how different variables may it be financial ratios, risk governance or financial innovativeness rating etc. could impact the firm value which in turn impacts the managerial decision making of senior executives and the economy as a whole.

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