BANK PARIKRAMA

A Journal of Banking & Finance

Volume XLVIII, Nos. 1 & 2, March & June 2023

www.journal.bibm.org.bd

Quraterly Journal of
Bangladesh Institute of Bank Management (BIBM)

BANK PARIKRAMA

A Journal of Banking & Finance

Volume XLVIII, Nos. 1 & 2, March & June 2023

BANGLADESH INSTITUTE OF BANK MANAGEMENT

ISSN 1019-7044

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Ethics in Banking in Bangladesh: An Exploratory Discourse

- AKM Saiful Majid, Ph.D.*

The Concept of Ethics

Ethics has been defined in many ways. It sometimes has been called "moral science", "the science of values", "the science of right conduct", "the science of obligation", and also as "the general inquiry into what is good". It can be considered as the science of character or habit. It evaluates human character, habits, and also assesses their propriety or otherwise. The word ethics originated from the Greek word "Ethikos" and the Latin word "Ethos". Ethics refers to those values, norms, beliefs, and expectations that determine how people, within cultures and societies, live and act (Hartman, 2018). It implies the moral standards or the set of norms, values, beliefs and traditions for people how they should act and live.

Aristotle, the Greek Philosopher, is known to have coined the term ethics which, according to him, implies the set of norms, principles and rules of morals that can help the conduct of business (Filomena, 2012). It also regarded as the science of the good, it is the science par excellence of the ideal and the ought. Ethical principles imply ethical rules that put values (or norms) into action.

A code of ethics, commented by Justice Habibur Rahman, is a code of conscience based on fairness, honesty, curtesy, self-restraint, and consideration for other, and hence is based on a collective sense of right or wrong.

*Professor AKM Saiful Majid, Ph.D. is the Chairman, Board of Directors, Grameen Bank and Former Director, Institute of Business Administration (IBA), University of Dhaka, Bangladesh, Email: saifulmajid60@gmail.com. He was invited to deliver the 21st Nurul Matin Memorial Lecturer on 11 March, 2023 at BIBM Auditorium. The views expressed in this lecture are the speaker's own.

Normative Ethics, Descriptive Ethics, Social Ethics and Virtue Ethics

Normative ethics is concerned with norms and standards of appropriate and proper behavior. Norms establish the standards and guidelines for determining what we should do, how we should act, what type of persons we should be. At times **normative myopia** that refers to the tendency to ignore, or the lack of ability to recognize, ethical issues in decision-making (Hartman, et al., 2018). Descriptive ethics deals with a descriptive and empirical account of those standards that really guide behavior. Social ethics deals with questions of political, economic, civic and cultural norms aimed at promoting human behavior, and is concerned with how we should live together with and how social organizations ought to be structured. Virtue ethics is an approach to ethics that studies the character traits or habits that constitute a good human life. Virtue ethics focusses on making decisions based on integrity and character of the company professionals. The virtues for a good banker can provide answers to the fundamental ethical question "what kind of person should a banker be?"

Principle of Banking Ethics

Banking ethics implies honesty, impartiality, faithfulness, transparency, trustworthiness to customers and other stakeholders. Basic principles of banking ethics, according to Bozovic, include:

- Principle of mutual trust
- Principle of mutual benefit and interest
- Principle of good intentions
- Principle of business compromise and business tolerance
- Principle of ethical improvement of business behavior
- Principle of demonopolization of one's position

Basic principles of banking ethics, according to Dastidar, include:

- Honesty
- Trustworthiness
- Impartiality
- Compatibility
- Transparency

Justice Shahabuddin Ahmed and M. Syeduzzaman focused on 'sacred trust' of the people on banks. That is, they deposit their money on the basis of their full confidence on a bank. Professor Rehman Sobhan reflected that the ethical component of banking in Bangladesh is built on trust.

The concept of ethical banking is characterized by a high degree of ambiguity as the financial transaction and commitment by banks and other financial institutions are highly complex (Nowrin,2011; Oats and Dias, 2016). Ethical banking behavior is influenced by a number of factors that include government regulation, rule of law, ethical set of codes used by the banking industry, social pressure, etc. (Mahboob, 2007). Banking ethics and banks compliances can contribute to improved risk management (Koslowski, 2010). Ethical banking practices can enhance banks' reputation and brand image, and can help avoiding payment of fines and damages.

How Relevant is Ethics for Banks?

Business ethics implies the norms and principles that regulate the conduct of the banking industry. Ethical banking services significantly influence the major stakeholders, particularly the customers and the service provider banks. It is important to highlight here that historically the mainstream economic literature and business philosophy marginalized the role of business ethics. Business ethics focused primarily on "the shareholder approach" that sought to optimize the shareholder value creation by maximizing profit of the firm.

The fundamental question in the mainstream economic literature of the West related to the relevance of ethics in the conduct of business (Goicocha, 2010). Banking ethics, as rightly argued by Benedict, risked becoming subservient to the existing economic and financial system rather than working as a correcting mechanism for the dysfunctional aspects of banking (Benedict, 2009). Historically banks and other financial institutions seemed to assume that business ethics was not basically relevant (Goicocha, 2010).

Several incidences of business opportunism occurred in the banking industry globally, and also in Bangladesh over the last 4 decades. The banking industry in the United Kingdom came under increasing pressure due to unethical banking

practices in the forms of market manipulation and inappropriate sales from 2000-2010 (Goyal et al., 2011). The financial crisis of 2008-09 that started in the USA significantly contributed to the global recession, and it resulted in a remarkable public discontent with the global banking industry (Nowrin, 2011). Global as well as Bangladesh banking industry have been undergoing a surge in financial crimes and unethical practices over the last two decades (Habib el al., 2018). Indian banking industry is also considerably characterized by unethical banking practices and financial frauds. In terms of perceived prevalence of fraud, India, according to Global Fraud Report 2015-16, is ranked as the third highest (Tiwari et al., 2017).

Justice Shahabuddin Ahmed commented that ethics is not relevant for banking business, implying that ethics has nothing to do with business (Ahmed, 1998).

Professor Rehman Sobhan observed that the Catholic Church viewed profit motive as anti-Christian in the middle ages. Business and profit motive gained respectable recognition after the Protestant reformation period. However, business profit motive gained respect and prominence after the first industrial revolution.

Why Ethical Banking?

Ethical banking practices serve best the long-term interests of the stakeholders, particularly the customers, the service provider banks and the bank owners. Ethical banking practices have some inherent strengths and advantages, and can contribute to:

a) increasing customer satisfaction, customer loyalty and customer value creation;
b) creating opportunities for enhancing revenue and profit of banks;
c) reducing risk exposure and better risk management;
d) increasing reputation and image of the banks;
e) creating competitive advantage(s) and enhancing competitiveness of banks;

f) protecting depositors' and shareholders' interests;

g) boosting public trust and confidence;

h) promoting sustainability of the banks.

Bad management in the banking industry of Bangladesh has given rise to unethical banking practices in the country. In Bangladesh multiple incidences of bank failures occurred over the last 3 decades due to unethical banking practices in Bangladesh.

Ethical Banking Leadership and Corporate Culture in the Banking Industry of Bangladesh

A healthy corporate culture is a very important pre-requisite for creating strong ethical leadership in banks. A healthy corporate culture aims at cultivating values, beliefs, expectations and behavioral patterns (of bankers) that best and most effectively support ethical decision making (Hartman, et al., 2018). It is one of the primary responsibilities of corporate leadership to steward the effort for ethical decision making and implementation. Banking professionals, particularly at the top level, need to demonstrate to their followers/ subordinates as their "role models", and are supposed to set good ethical examples by keeping promises and commitments, by maintaining their ethical standards, and by supporting their followers/subordinates in doing so. This is important because employees of the banks need guidance of the leaders/supervisors on how to act ethically.

Creating a shared ethical culture is a key responsibility of the leaders in the banking industry of Bangladesh. Banking leaders need to show 'visible ethical actions' for other employees to follow. Unethical banking practices by banking professionals should be strongly sanctioned to create examples. It is important to highlight here that every effective leader is not an ethical leader. Ethical leadership creation and succession in banks can significantly contribute to their sustainability (Hartman et al., 2018). High productivity, efficiency and profitability are minimal goals for banks to be sustainable.

Corporate culture of the banking industry at the contemporary time needs to be influenced, redesigned and positively and ethically impacted through

appropriately formulated "codes of conduct". "Codes of conduct" imply behavioral guidelines and expectations to govern all members of a bank. A "code of conduct" is precisely "a statement of values" that banking professionals need to put into action. Formulation of "codes of conduct" for a bank should be accompanied by formulating its vision and mission statements that should inspire all employees and stakeholders.

Compliance-Based and Values-Based Corporate Cultures

In order to understand the basic traits of corporate cultures of the banking industry of Bangladesh, it is important to understand the following two types of corporate cultures. As the banking industry in our country has been undergoing rapid changes, the significance of adaptation, transition and change management in our banking industry deserves serious consideration.

The compliance-based corporate cultures reflect the traditional approach, and emphasize obedience to the rules as the primary obligation of ethics (Hartman, 2018). Legal counsels and audit offices are empowered to mandate and to monitor compliance with the law and with internal codes. Values-based corporate cultures aim at reinforcing a particular set of values rather than a particular set of rules. Codes of conduct in values-based cultures focus on the application of the values of the banks. This type of corporate culture has more progressive and flexible traits.

The following table shows the major differences between compliance-based and values-based corporate cultures (Hartman, 2018):

Compliance-based Cultures	Value-based Cultures
Audit focus	Business Focus
Transaction- based	Process-based
Financial account focus	Customer focus
Compliance objective	Risk identification, process improvement objective
Policies and procedures focus	Risk management focus
Multiyear audit coverage	Continual risk- reassessment coverage
Policy adherence	Change facilitator
Budgeted center	Accountability for performance improvement results
Career auditors	Opportunities for other management positions
Methodology: Focus on policies, transactions, and compliance	Methodology: Focus on goals, strategies, and risk management processes

Healthy Vs. Unhealthy Corporate Cultures in the Banking Industry of Bangladesh

There are several instances that reveal the existence of unhealthy corporate cultures in banking industry of Bangladesh. Unhealthy corporate cultures of banks have adversely affected their work climate and performances over the last four decades. For instance, BCI, BASIC Bank, Padma bank, Islamic Bank of Bangladesh have demonstrated little regard for ethical standards, and have been run by banking professionals at the top level who were driven by greed and ego gratifications. Bankers driven by greed, self-dealing and ego, and an "ends-justify- the means" mentality in pursuing overambitious revenue and profitability targets led to multiple unfortunate banking scandals in the country.

Major Symptoms of Unhealthy Corporate Cultures in the Banking Industry Include:

a) Greed driven, unethical corporate cultures;
b) Politicized cultures;
c) Change-resistant cultures;
d) Incompatible, clashing cultures;
e) Insular, inward-focused cultures.

a) Greed-driven, Unethical Cultures of Banks

Unhealthy corporate cultures of selected banks in Bangladesh have ever the last four decades adversely impacted the work climate and banks performances. For instance, BASIC Bank, Padma Bank, Islamic Bank of Bangladesh have demonstrated little regard for ethical standards, and have been run by banking professionals at the top level driven by greed and ego gratifications. Bankers driven by greed, self-dealing and ego, and an "ends-justify the means mentally" in pursuing overambitious revenue and profitability targets led to very unfortunate banking scandals in the country.

b) Politicized Corporate Cultures

Politicized corporate cultures exist in a number of banks in Bangladesh. Politicized corporate cultures make the internal environment of banks unhealthy because political infighting consumes a great deal of effort and energy of banks. This also leads to the result that what is best for a bank takes a backseat to political maneuvering. Internal politics has been found to pervade the work climate of a good number of banks in Bangladesh. Also the positions taken usually by top banking professionals aim at protecting and expanding their turf.

c) Incompatible, Clashing Subcultures

In Bangladesh it is not unusual for banks to have multiple cultures (or subcultures) with differing values, beliefs, interests and practices within a bank. Existence of multiple cultures/ subcultures create the problem of compatibility and adversely affect the performance of banks. Examples include the instances of several conflicts that have occurred between bank management and bank unions in our country. This type of clashing, incompatible subcultures within a bank created many unhealthy, conflicting situations in banks that impeded proper coordination, cohesion and teamwork in Bangladesh.

d) Change Resistant Cultures

Fear of change and skepticism to new developments overwhelmingly prompt managers (including bankers) to lean often toward safe, conservative options that are intended to maintain status quo, to protect their power base, and to guard their personal interests. Change- resistant cultures of banks in our country promote unhealthy behaviors such as risk avoidance, avoidance of product innovation or process innovation, lack of focus on continuous improvement in value chain activities of banks, and slow response to the required changes of the banks.

e) Insular, Inward-focused Cultures

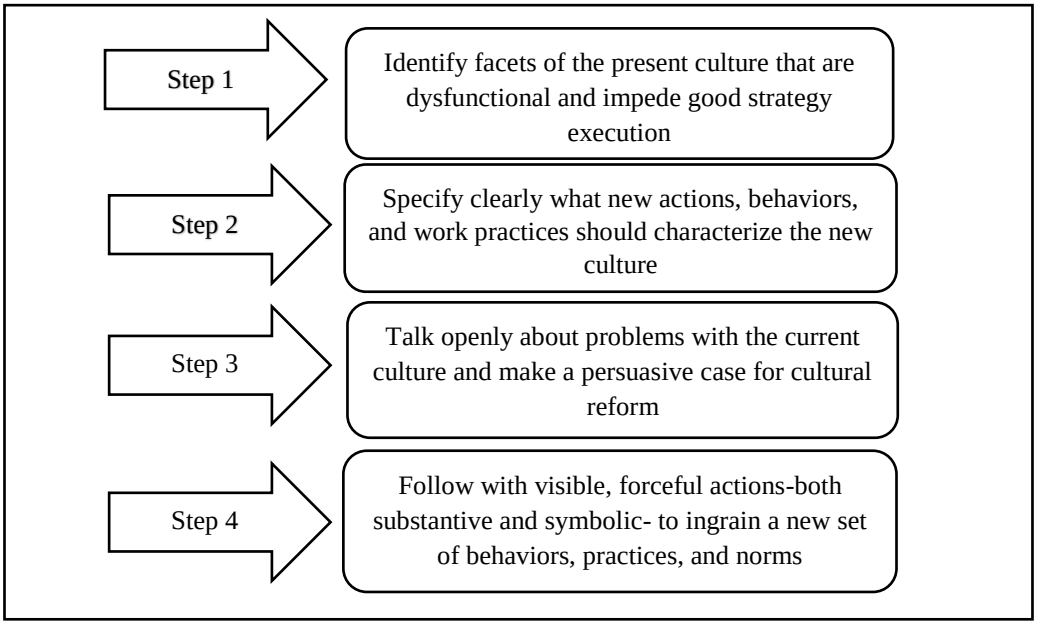
There exists a strong tendency usually among high performing banks to neglect and not to listen to what their customers are saying, and how customers' needs and expectations are changing. Such belief in its competitive superiority breed arrogance, prompting bank executives to undermine the competitive

advantages of their competitors (Thompson, 2018). An insular, inwardly looking culture of a bank can lead to serious failures in recruiting quality people who can come up fresh, creative thinking and outside perspectives.

Changing Problem Corporate Cultures in the Banking Industry of Bangladesh

Changing a problem corporate culture is one of the toughest management tasks. Competent leadership at the top level of a bank is one of the most significant factors for successful culture change efforts. The following figure shows the steps required for changing a problem culture:

Figure 1: Changing a Problem Culture (Thompson et al., 2018, p. 360)



Where Do Ethical Standards Originate from? Are the Ethical Standards Universal, or Dependent on Local Norms?

To answer these questions we need to look at the ethical schools of thought which include:

a) The school of ethical universalism

b) The school of ethical relativism

c) Integrative Social Contracts Theory.

a) The School of Ethical Universalism argues that the most fundamental conceptions of right and wrong are universal, and are applicable to members of all countries, societies, cultures, companies, and all business persons (Thompson et al., 2018). Universal ethical standards transcend society, culture, and religion (Mark et al., 2005).

Regardless of the country or culture or society in which a bank is carrying on its business activities, ethical universalism in based on the collective views of multiple cultures and societies to draw clear boundaries on what constitutes ethical and unethical business behavior (Thompson, 2018). This means that basic moral standards do not significantly vary according to local cultural beliefs, traditions or religions convictions. This implies that all banks or other companies can develop same codes of ethics throughout the globe. For instance, being truthful (not lying and not being deliberately deceitful), not cheating or harming people are moral standards that resonate with people of all cultures, societies and religions.

b) The School of Ethical Relativism argues that there are observable, significant variations from one culture to another culture, from one society to another society, and also from one religion to another religion (Thompson et al., 2018). It is highly agreeable that there are moral standards or prescriptions that are universal. It is also true that different religious beliefs, social traditions and customs, core values and behavioral norms give rise to different sets of moral standards about what is moral or immoral, what is fair or unfair, and ethically right or wrong. In Muslim countries like Bangladesh, Saudi Arabia, Iran,

Pakistan etc., banking professionals apply ethical standards that are compatible with the teachings of Islam. For instance, European and American bankers often establish ethical standards of business conduct that differ significantly from that of the ethical conduct practiced in China or Japan. The school of ethical relativism holds that a "one-size-fits-all" consideration of ethical universalism is remarkably inappropriate for business behavior and actions for all banks. Whether certain business behavior or actions are ethically right or wrong need to be assessed on the basis of societal norms, cultures, local traditions, and religious beliefs. Ethical relativism argues that there can be no "one–size–fits–all" ethical standards for professional bankers of Bangladesh. However, it is very challenging to create relative ethical standards for banking professionals of our country.

Justice Habibur Rahman commented on the importance of relativistic position of business/ banking ethics which advocates that value judgements are exclusively matters of taste or arbitrary preference and no objectively valid statement can be made in this realm.

c) Integrative Social Contracts Theory holds a middle position between the opposing views of ethical universalism and ethical universalism. This integrative social contracts theory argues that business ethical standards are governed by a) a limited number of universal ethical standards/principles that are necessary for creating legitimate ethical boundaries on business behavior in all situations for all banks, and b) the circumstances of local values, beliefs, cultures, traditions that further constitute what is ethically right or wrong (Thompson, 2018).

Universal ethical principles create the basis to form a 'social contract' that all business persons, companies, cultures and societies in all situations have a duty to observe. Integrative social contracts theory has a significant strength in that it accommodates the best component of ethical universalism and ethical relativism. The payment of bribes and kickbacks constitute a good example of the application of the integrative social contracts theory to banks in Bangladesh. Bribery flourishing in a country does not mean it is a legitimate ethical norm no matter what the local customs, values, traditions and beliefs are (Thompson, 2018).

The fundamentals of corporate culture are highly important to assess the role of core ethical values and moral standards that effectively drive ethical business behavior of banks. Core values and ethical behavior have also culture-shaping significance.

Suggestions for Corrective Measures for Avoiding Unethical Banking Practices Include:

a) Strong ethical leadership is an important/ necessary condition for creating ethical banks. This needs to be supported by formulating ethical policy documents that are sufficiently clear, consistent and unambiguous. Managers need to work as ethical 'role models' for others to follow. Top managers have more important role to promote ethical bank environment and culture. It is also important that banks need to introduce sufficient incentives and disincentives for ethical or unethical banking activities. Managers need to demonstrate strong ethical commitment, character, morals and virtue before their subordinates, focusing thereby the needs and rights of the subordinates.

b) Managers need to fairly treat their subordinates and make them clearly understand management's expectations on them. Managers should not use their subordinates/followers for achieving their personal gains, rather they should promote their legitimate goals and interests. It is important that the owners and managers should have sufficient knowledge of business ethics. Business schools/universities should introduce more courses on business ethics.

c) Fair recruitment in banks can play a critical role. Some banks do not follow the practice of fair recruitment. Some banks emphasize on political connections and social references.

d) Auditors have significant role in promoting ethical banking practices. Some studies suggest that auditors of a number of public and private banks in Bangladesh have contributed to remarkable unethical activities in Bangladesh (Sadia et al., 2019). Unqualified opinions given by the auditors played a significant role in promoting a number of unethical banking practices in Bangladesh. Loan scam activities of BASIC Bank, Padma Bank, Islamic Bank of Bangladesh, Sonali Bank Ltd, (Hallmark Group scandal) etc., have over the years

contributed to decreased trust and confidence of the borrowers, and public in general.

Emerging economies like Bangladesh are characterized by weak market forces, and often have regulatory loopholes creating opportunities for bankers to disregard willfully the social obligation of banks to their customers and society. The banking industry in Bangladesh over the last four decades has shown the rise of a nexus of selected families and banking officials that increased fraudulent banking practices and money laundering.

Banks and other financial institutions before the financial crisis of 2009 practiced the shareholder approach that focused on maximizing shareholder value and return on investment of the firms (Koslowski, 2010). Ethical principles and values were largely ignored by many banks. The basic agreement for such banking practices rested on that "the total rationality of market participants and full disclosure of contractual conditions to ensure that the ethical standards are enforced anyway by the market. The issue of sound, ethical banking practice, considering the extra ordinary rationality of market participants, seemed irrelevant. Economic theories argue that market participants are motivated by self-interest that leads, even without applying ethical consideration to practice, to optimality. However, ethical economic theories consider that ethics is one of the conditions that lead to market optimality. It further argues that ethical motivation and ethical (banking) practices are important ingredients for market participants who are motivated by self-interest to create opportunity for optimality. It also assumes that information asymmetries significantly adversely affect non-professional investors and bank customers to overcome the challenges of fair market play. The banking industry market has been growing over the years in size in Bangladesh.

Non-Performing Loans, Economic Growth and Profitability of Banks in Bangladesh

Bangladesh has been experiencing a bad credit culture since 1980. Non-performing loans (NPLs) have created a serious concern for the banking sector of the country. NPLs have been adversely affecting profitability of a good member

of public and private sector banks (Islam et al., 2021). The findings of a research study conducted by Islam et al. in 2021 showed negative relationship between NPL-GDP and NPL-ROA. That is, NPLs have been adversely affecting the economic growth as well as the profitability of banks of the country. The reasons for increasing NPLs in Bangladesh are related to unethical banking practices that are driven by greedy bankers, lack of good governance and accountability, willful default by selected groups of clients, etc.

Thus, the problem of NPL has turned into an alarming issue for the baking industry of Bangladesh. As of June 2021, the incidence of NPL was 8.61 percent of the total loan and 3.26 percent of GDP (Banerjee et al., 2021). Bad category loans constituted 87% of the NPLs. As adversely classified loans do not earn money for banks as the provisioning required for NPLs eats banks profit (Banerjee et al., 2021). NPLs have been increasing in Bangladesh over a prolonged period, and have been hurting the economy by eroding credit supply, misallocating credit, and also leading to bankruptcy.

Which Ethical Principles Does Our Banking Industry Need to Focus?

Our banking industry may emphasize the CRT (Cuax Round Table) principles. The global financial crisis of 2009 highlighted the necessity of sound ethical banking practices globally. Corporate governance and ethical failures significantly contributed to this financial crisis. As trust and confidence are critical ingredients for free market to operate on sustainable basis, the 7 core principles for responsible business behavior emphasize particularly the issues of trust and confidence. These principles are rooted in three ethical foundations: a) living and working for mutual advantages, b) responsible stewardship, and c) the respect and protection for human dignity (Hartman et al., 2018).

"The Caux Principles for Responsible Business

The Cuax Round Table (March 2009)

Principle 1- Respect Stakeholders beyond Shareholders

A responsible business acknowledges its duty to contribute value to society through the wealth and employment it creates and the products and the services it provides to consumers. A responsible business maintains its economic health and viability not just for shareholders, but also for other stakeholders. A responsible business respects the interests of, and acts with honesty and fairness towards, its customers, employees, suppliers, competitors and the broader community.

Principle 2- Contribute to Economic, Social and Environmental Development

A responsible business recognizes that business cannot sustainably prosper in societies that are failing or lacking in economic development. A responsible business therefore contributes to the economic, social and environmental development of the communities in which it operates, in order to sustain its essential 'operating' capital- financial, social, environmental, and all forms of goodwill. A responsible business enhances society through effective and prudent use of resources, free and fair competition, and innovation in technology and business practices.

Principle 3- Respect the Letter and the Spirit of the law

A responsible business recognizes that some business behaviors, although legal, can nevertheless have adverse consequences for stakeholders. A responsible business, therefore, adheres to the spirit and intent behind the law, as well as the letter of the law, which requires conduct that goes beyond minimum legal obligations. A responsible business always operates with candor, truthfulness, and transparency, and keeps its promises.

Principle 4- Respect Rules and Conventions

A responsible business respects the local cultures and traditions in the communities in which it operates, consistent with fundamental principles of fairness and equality. A responsible business, everywhere it operates, respects all applicable national and international laws, regulations and conventions, while trading fairly competitively.

Principle 5- Support Responsible Globalization

A responsible business, as a participant in the global marketplace, supports open and fair multilateral trade. A responsible business supports reform of domestic rules and regulations where they unreasonably hinder global commerce.

Principle 6- Respect the Environment

A responsible business protects and, where possible, improves the environment, and avoids wasteful use of resources. A responsible business ensures that its operations comply with best environmental management practices consistent with meeting the needs of today without compromising the needs of future generations.

Principle 7- Avoid Illicit Activities

A responsible business does not participate in, or condone, corrupt practices, bribery, money laundering, or other illicit activities. A responsible business does not participate in or facilitate transactions linked to or supporting terrorist activities, drug trafficking or any other illicit activity. A responsible business actively supports the reduction and prevention of all such illegal and illicit activities" (Hartman et al., 2018, Pp. 100-101).

CSR and Banks in Bangladesh

Banks in Bangladesh need to engage in Corporate Social Responsibility (CSR) activities to focus on their responsibility to the society, community as well as to their employees. CSR needs to be aimed to increase the quality of life of the internal and external stakeholders.

Drivers of Unethical Banking Practices in Bangladesh

Several factors are responsible for the unethical business practices in the banking industry of Bangladesh. Important drivers of unethical banking practices include:

a) Personal Greed, Self-interest and Faulty Oversights

Driven by greed, self-interest, power and status, bankers have been found to resort to unethical practices over different time periods. Many cases of self-dealing occurred in the country as managers took advantage of their positions to promote their personal, private interests neglecting the interest of their banks. Also corporate governance failures, particularly faulty supervision and oversights contributed to unethical banking practices in Bangladesh.

b) Banking Cultures that Puts Profitability and Banks Performance Ahead of Ethical Behavior

Banks characterized by corrupt or amoral work climate lead to low performance and high degree of unethical practices. Cultural norms such as "everyone else does it" and "It is key to get the job done" allow bankers to think that they can get away with resorting to unethical banking practices.

c) Excessive, Unrealistic Pressure to Achieve Short-term Targets

Heavy pressure on the banking executives to meet the short-term profit and other targets make them "do whatever it takes" to deliver good results. Managers get prompted to save their reputation, and disregard ethical "red flags" by making ethical compromises.

Political patronage system, as observed by the Economist, created bad credit culture, and consequently very severely damaged the credit system in Bangladesh since the 1980s.

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Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 24-39)

Effect of Product Diversification Strategy on Firm Performance: Modifying Role of Ownership Structure

- Md. Asaduzzaman Arif*

Abstract

The goal of this study is to analyze how the Firm performance are affected by the diversification strategy, as well as how ownership structure affects relationship. A number of studies have been conducted by several researchers on this topic and they ended up in mixed decisions. But very few studies on this issue have been carried on in the emerging economies. This study is conducted to fill up this study gap and to find out how much influential owners are in taking diversification strategies of the firms. Bangladesh is one of the most remarkable emerging economies of the world. Therefore, Bangladesh has been chosen as a proxy for emerging economy. The data set for this empirical study includes 29 Dhaka Stock Exchange listed non-financial enterprises for the years 2017 to 2021. Return on Equity (ROE) has been used as the proxy for firm performance and thus, ROE has served the purpose of dependent variable for this study. Total Diversification has been used as independent variables and Ownership structure has been used as the interactive variables. A data model may be influenced by a number of external factors and this study is not free from those moderating variable effects. As a result, Leverage has been taken as an exogenous variable in this study. The Random Effect Model has been applied since the data are strongly balanced panel data. The selection of the model is based on the Hausman test. From the analysis, Diversification has been found to have significant influence on Firm performance and Managerial Ownership have been found to have strong positive role in the effect of Diversification strategy on Firm performance whereas, Institutional Ownership has been found to have no significant impact on the dependent variables.

Keywords: Diversification, Institutional Ownership, Managerial Ownership, Leverage, Firm Performance
JEL Classification: L1, L25

1. Introduction

A firm's performance is reflected in the stock prices. Firm performance triggers the investors decision. Investors see the performance as an indicator of stock price movements. There are a number of Ratios or other financial measures to expose the Firm performance of a firm. However, the mostly used measures are Return on Equity (ROE) and Return on Assets (ROA). A firm's Firm

* Md. Asaduzzaman Arif is a Lecturer, Bangladesh Institute of Bank Management (BIBM), Dhaka, Bangladesh, Email: a.arif.du13@gmail.com. The views expressed in this paper are the author's own.

performance can be affected by a number of factors some of which are internal factors that are firm specific and some are market specific to which the firm has no influence. Therefore, firms focus on the internal factors and take different types of actions to increase the value of the firm. Diversification is one of the mostly used techniques for increasing the firm value. The more diversified the firms are in terms of product and market diversification, the more the firms are likely to capture the market and thus, it may increase the firm performance. And a number of studies have confirmed this theory. As such, Colpan and Hikino (2005) showed that diversification significantly influences the firm performance (Colpan & Hikino, 2005). Large organizations frequently employ the diversification approach to enhance revenue by acquiring additional firms that are either connected to or unrelated to the company's primary business (Hitt, Ireland, & Hoskisson, 2007). The effect of diversification is not always positive and this has been found in several studies. Satoto (2009) found a negative impact of diversification strategy on the company's performance (Satoto, 2009). Due to the decision-making process, the selection of a diversification strategy is still up for debate and the decision-making process being affected by a number of internal (micro) and external (macro) factors. There are several other factors that comprehensively affect firm performance. Out of a number of influential factors leverage is the most prominent one. Firms take debt for a number of reasons such as diversifying products or services, enhancing firm's value through getting tax benefits. Some prominent researches have been carried on to examine the effect of Leverage and firm performance. Roy and Li (2000) say that firms prefer to take debt not to expand the business in diversified form instead they raise debt to raise the value of the firm (Roy & Li, 2000). The Leverage and corporate performance have a dual faced relationship. When a firm expects an upward trend in expansion, it requires a large amount of capital for which firms prefer to take debt and vice versa. However, more debt brings more risks and some form of fixed expenses such as fixed interest payment. Chen (2004) found a negative effect on the profitability of Leverage (Chen, 2004). The impact of diversification and Leverage on the firm performance cannot be stated in isolation. They are interactive. Theoretically, firms bring in more debt in the Leverage when they expect to expand through diversification. However, diversification and Leverage

decisions are highly affected by the boards. And so, it's urgent to consider the management influences as well as institutional influences while reaching any conclusion regarding the impact of diversification and Leverage on the firm performance. Thus, in this research the role of ownership structure on the diversification in affecting the firm performance has been tested along with Leverage as modifying variable. Institutional investors are watchdog of a company and they can have direct influence in decision making which in return protects the investors interests. Amongst the empirical studies, Barclay and Holderness (2000) discovered that institutional ownership has a significant favorable impact on business performance (Barclay & Holderness, 2000). Based on the above theoretical discussions, this study aims at testing the effect of diversification on firm performance, testing the effect of Leverage on firm performance, testing the influences of institutional as well as managerial ownership on diversification in influencing the firm performance on the emerging economy.

2. Literature Review

Several researches have been conducted by researchers relating to the Diversification and Firm performance. However, there is no unique conclusion by the researchers on the determinants of the firm performance. In addition, it's also quite impossible to gather all the modifying factors of the performance of a firm in one research. Thus, researchers take into consideration only a few independent variables to find the impact on firm performance. The prominent researches conducted on the relationship between the Diversification and firm performance show differing conclusions. Morris, Fier and Liebenberg (2017) studied the effect of diversification relatedness with the firm performance in the U.S. property-liability insurance industry and found strong impact of related diversification on the firm performance and no impact of unrelated diversification on firm performance (Morris, et al., 2017). Zheng and Tsai (2019) studied the effects of diversification strategy and board size on firm performance and found positive relationship between related diversification and firm performance and negative relationship between unrelated diversification and firm performance (Zheng & Tsai, 2019). Mehmood, Hunjra and Chani (2019) tested the impact of

corporate diversification and financial structure on firm performance on the south Asian countries using two-step dynamic panel approach and found positive relationship (Mehmood, et al., 2019). Bettis (1981) found that related diversification performs more than two to three points better than unrelated diversification (Bettis, 1981). Diversification strategy greatly influences the firm performance, according to Kahloul and Hillara's (2010) research (Kahloul & Hillara, 2010).

Diversification decision is highly influenced by the management. It is at their discretion to take diversification strategy. As a result, ownership can moderate the diversification decision of a firm. Thus, in this paper ownership structure has been considered as a moderating variable. According to various studies, institutional and managerial ownership has varying degrees of influence on Leverage and diversity. Barclay and Holderness (2000) found strong positive relationship of institutional ownership on firm performance (Barclay & Holderness, 2000).

Ownership structure can affect the firm performance directly or indirectly. The indirect effect is not straight forward. Ownership structure affects the product diversification and Leverage decisions which affect the firm performance. Tanui (2021) found a strong interactive moderating impact of Leverage and institutional ownership on firm performance through corporate diversification (Tanui, 2021). Pound in 1988 carried out research on the impact of pressure-resistant and pressure-sensitive investors on business performance and discovered a negative correlation between pressure-sensitive institutional investor and business performance (Pound, 1988). Shleifer and Vishny (1986) discovered a significant impact of institutional investors on corporate performance (Shleifer & Vishny, 1986). Del Guercio and Hawkins (1999) found that institutional investors monitoring enhances the chances of firm performance through increasing the focus of managers on the performance (Del Guercio & Hawkins, 1999). Demsetz and Villalonga (2001) conducted a study to find the endogeneity between performance and institutional ownership and found that both of the factors can affect each other in various ways (Demsetz & Villalonga, 2001). Tsouknidis (2019) studied the relationship between institutional ownership and firm

performance on U.S. listed shipping companies and found a negative relationship (Tsouknidis, 2019). However, it cannot be stated as a law that institutional ownership will always have a positive or a negative impact on firm performance. Daryaei and Fattahi (2020) tested the asymmetric impact of institutional ownership on firm performance at different levels and found positive relationship at all levels (Daryaei & Fattahi, 2020). Therefore, it is clearly shown that there are some interactive relationships in between Ownership structure, Diversification and Firm Performance.

This study incorporates leverage also as a modifying factor of firm performance. The leverage of a firm can be defined by the two most prominent theories- trade off and pecking order theory. A firm changes the Leverage by taking more debt or by relinquishing debt for different reasons. Firstly, they consider enhancing firms value and this is the main stimuli for which firms take debt. This positive relationship between debt in Leverage and firm performance is proven in several studies conducted by researchers. Ganiyu et al. (2019) tested a non-monotonic relationship between Leverage and firm performance on 115 listed companies of Nigeria and found a positive relationship (Ganiyu, Adelopo, Rodionova, & Samuel, 2019). Several studies have been conducted to find the impact of Leverage on firm performance. Leverage significantly influences the firm's performance (Mabashar, Raheman, & Zulfiqar, 2012). Taking more debt firms invite another cost called financial distress cost and there is a trade-off between tax synergy from more debt and financial distress cost. If financial distress cost surpasses the tax synergy the value of the firm will be lower. Phuong and Nguyet (2017) tested the relationship between leverage and firm performance on the listed non-financial firms of Vietnam and found a negative relationship (Phuong Vy & Nguyet, 2017).

Besides, Diversification can be influential to take on debt into the capital structure of a firm. When a firm takes diversification strategy, it needs a large amount of capital which they can collect either from internal sources by increasing the equity in the Leverage or from external sources by increasing debt in the Leverage. Therefore, theory clearly indicates that diversification strategy influences the Leverage decision and performance of firms. Frank and Goyal

(2008) suggested that firms usually go for debt when they see that debt increases the firm value (Frank & Goyal, 2008). Jang and Tang (2009) showed that the relationship between financial leverage and profitability in the hotel business is moderated by internal diversification (Jang & Tang, 2009).

This type of research is not very much common in the frontier economies. Several researches have been carried on but most of them are mainly based on the developed economy. Developed economies have strong in force laws and regulations. However, frontier economies face several problems in the transition periods. Corporations in these economies are very prone to ownership influences. Therefore, this paper studies the influences of the ownership structures in the diversification strategy and the resulting effect on the firm performance.

3. Data and Methodology

3.1 Defining Variables

Defining variables are the most important task of an empirical research and it is also considered as the base of a research work. Variables for this paper has been derived from a number of prominent research works of different scholars.

3.2 Explained variables

This paper mainly focuses on the effect of Diversification strategy on Firm performance and the role of Ownership structure as moderating variable in that. Thus, Return of Equity (ROE) have been taken as proxy for explained variables.

$$\text{ROE} = \frac{\text{Net Income}}{\text{Owner's Equity}}$$

The dependent variable in this paper is the ROE which have been taken as a proxy for Firm performance and has been calculated by taking Net Income in the numerator and Owner's Equity in the denominator.

3.3 Independent Variables

The independent variable for this study is the Diversification strategy. Diversification can be both related and unrelated. There is no consensus on which is the best measurement for calculating Diversification. Different models have

been used previously for calculating the Diversification such as Herfindahl-Hirschman index, Entropy Measures. In this paper, Entropy measure has been used to calculate the diversification strategy. In this paper, diversification has not been separated as related or unrelated. The basic formula Entropy measure of total Level of Diversification (DT) is-

$$DT = \Sigma\, Pj * In\frac{1}{Pj}$$

Here, Pj means the proportion of sales in business segment j and In (1/Pj) means the weight.

3.4 Moderating Variables

This study looks at how ownership structure affects diversification in affecting a firm's performance. A firm's ownership structure is often institutional and managerial. Both types of ownership could theoretically have an impact on how diversification affects the firm performance. The proportion of shareholding represents the ownership in a particular firm and it is stated in the Annual Report.

3.5 Intervening Variable

Leverage has a strong effect on the Firm performance of a firm and it is proven by several researches as mentioned in the literature review section. Thus, when a firm takes diversification strategy for expansion, it considers leverage for funding which ultimately affects the firm performance. As a result, Leverage in this paper will play the role of an intervening variable of the firm performance. Debt to Equity Ratio is considered as the proxy for leverage which have been calculated as follows-

$$\text{Debt to Equity} = \frac{\text{Total Debt}}{\text{Owner's Equity}}$$

3.6 Data Collection

Data has been collected from the Annual Reports of the selected companies listed in Dhaka Stock Exchange (DSE). While selecting companies some criteria have been kept in consideration for example-

i. The company must have last five years (2017-2021) data available.
ii. The company must have some form of diversified business segment.
iii. The company must be non-financial.

4. Research Hypothesis and Analytical Models

In this study, successive impacts of both the institutional ownership and managerial ownership will be tested. The major objective of this study is to examine the influence the ownership structure in the diversification strategy of a firm and it's interactive impact on the firm performance. The secondary objective is examining the impact of leverage as intervening variable on the firm performance. Theoretically, ownership structure has moderating effect on diversification in the fluence on firm performance. Keeping this theory held true, the hypothesis for this study is-

Hypothesis: Ownership structure moderates the influences of diversification on firm performance.

The data set used in this study is balanced panel data. For a balanced panel data, the popularly used statistical test is either fixed effect model or random effect model determined through Hausman test. The statistical regression equation for this study is as follows-

$$ROE_{i,t} = \alpha + \beta*DT + \theta Ownership_{i,t} + \gamma*DT*Ownership_{i,t} + \delta Lev_{i,t} + \varepsilon_{i,t}$$

Here, DT = Total Diversification, calculated by using entropy measures.

DT*Ownership = interactive variable which is a multiplication between Total Diversification and Ownership structures.

Lev = Leverage

5. Research Output and Discussions

5.1 Descriptive Statistics

Table 1: Descriptive Statistics

	Mean	Median	Maximum	Minimum
Lev	1.0696	0.8889	3.6081	0.0083
DT	0.8469	0.7576	2.1073	0.0109
DT*IO	23.4649	20.7234	116.6204	0.0804
DT*MO	31.2734	27.3883	87.5668	0.1396
IO	26.6178	22.1300	68.1300	2.7300
MO	37.8708	33.0300	90.0000	3.9200
ROE	14.6269	8.2697	190.6951	-23.4866

Descriptive statistics of variables is a summary of mean, median, maximum, minimum and standard deviation of values. Among the variables used in this study, Leverage (Lev) shows a mean value 1.07 indicating in an average firms have more debt than the equity. The value also represents that on a highest note firms hold debt 3 times higher than the equity. Total Diversification (DT) shows a mean value of 0.8469 with a maximum value of 2.1073 and a minimum value of 0.0109. Institutional Ownership (IO) shows that on an average 26.62% shares are held by the institutional owners with a maximum of 68.13% and a minimum of 2.73%. On the other hand, Managerial ownership (MO) shows that on an average 37.87% shares are held by the managers or directors with a maximum holding of 90% and a minimum holding of 3.92%. Return on Equity (ROE) shows an average return of 14.63% of the selected firms having a maximum return of 190.70% and a minimum return of -23.49%.

5.2 Correlation

Table 2: Correlation Matrix

	Lev	DT	DT*IO	DT*MO	IO	MO	ROE
Lev	1.00						
DT	-0.29	1.00					
DT*IO	-0.27	0.72	1.00				
DT*MO	0.04	0.78	0.41	1.00			
IO	-0.14	0.11	0.63	-0.16	1.00		
MO	0.27	-0.08	-0.28	0.44	-0.48	1.00	
ROE	0.15	-0.05	-0.18	0.33	-0.23	0.56	1.00

The matrix above shows the correlation among the variables. From the table above, it is clear that there is no strong correlation in between any two variables indicating that the data are free from multicollinearity problem. Thus, the result drawn by using appropriate model on these variables would be unbiased.

5.3 Data Stationarity Test: Unit Root Test

In empirical studies, Stationarity of data is the most important factor. Because if any conclusion is drawn on using nonstationary data, the result will not be a best fit. In addition, non-stationary data set may lead to wrong conclusion. A number of statistical tests are used for testing the stationarity of the data. The most prominent and familiar ones are Levin, Lin & Chu t* test, Augmented Dickey-Fuller Test and PP-Fisher chi-square test. In this study, we have used all of the tests to increase the robustness of our study output. The hypothesis for the Unit Root Test is:

H_0: Data are non-stationary

H_1: Data are stationary

The assumption of the decision criteria is- the stationarity of the data must be supported by at least two of the three mentioned tests.

Table 3: Unit Root Test of the Variables

Variable	Probability Values		
	Levin, Lin & Chu t* Test	ADF-Fisher Chi-square Test	PP-Fisher chi-square Test
ROE	0.0000*	0.0287*	0.0012*
DT	0.0000*	0.0648*	0.0183*
DT*IO	0.0000*	0.2344	0.0376*
DT*MO	0.0000*	0.0292*	0.0013*
IO	0.0000*	0.0006*	0.0001*
MO	0.0000*	0.0243*	0.0018*
Lev	0.0000*	0.1957	0.0035*

In the table, we see that in some cases all the tests accept the alternative hypothesis as p-value is less than the critical value. However, in some cases at least two of the tests accept the null hypothesis and in none of the cases, the alternative hypothesis is supported by a single test. Therefore, we can conclude that the data of the variables used in this model are stationary.

5.4 Moderating Role of Ownership Structure in the Influence of Diversification on Firm Performance

We will test the influences of Institutional ownership and Managerial ownership along with the Diversification to evaluate the moderating function of ownership structure in the influence of Diversification on Firm performance.

5.4.1 Hausman Test

Hausman test is a statistical measure to find the best fit model between the fixed effect model and random effect model for panel data analysis. The hypotheses for this test are-

H_0: Random Effect Model

H_1: Fixed Effect Model

Table 4: Hausman Test Result

Test Summary		**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section Random		**3.528230**	**6**	**0.7402**
Variable	**Fixed**	**Random**	**Var (Diff.)**	**Prob.**
DT	-35.46908	-30.92253	187.19995	0.7397
DT*IO	0.008673	0.022426	0.015214	0.9112
DT*MO	0.923548	0.833660	0.089533	0.7639
IO	0.032054	0.017493	0.034137	0.9372
MO	0.356758	0.311642	0.031367	0.7989
Lev	5.268517	3.061582	2.942560	0.1983

The Hausman test result shown above clearly indicates that the null hypothesis will be accepted as the P-value (0.7402) is greater than the residual value (0.05). Thus, Random Effect model would be appropriate to reach the objective of this study.

5.4.2 Random Effect Model Results

To reach in a conclusion based on the modifying impact of interactive variables, firstly we will find out the impact of diversification as a sole independent variable on the Leverage.

Table 5: Random Effect of Diversification on Leverage

Variable	**Coefficient**	**t-Statistic**	**Prob.**
C	-1.324380	-0.074262	0.9409
DT	-30.92254	-1.833419	**0.0689
DT*IO	0.022426	0.100411	0.9202
DT*MO	0.833660	2.526110	***0.0127
IO	0.017493	0.066453	0.9471
MO	0.311642	1.315163	0.1906
Lev	3.061582	1.154273	0.2504
R-squared	0.172865	Mean dependent var	2.907112
Adjusted R-squared	0.136902	S.D. dependent var	10.74832
F-statistic	4.806811	Durbin-Watson stat	1.852343
Prob(F-statistic)	***0.000175		

Notes: *** = significant at 5% level of significance
** = significant at 10% level of significance

The table above demonstrates that Diversification (DT) has significant effect on Firm performance. But the coefficient value shows that the effect is negative which is contradictory to the theory. This may happen because of incorporating the year 2020 and 2021 into the model as the business in these years were highly affected by the COVID. Therefore, a new study can be carried on by incorporating the effect of COVID in these two years into the firm performance. In the model result, it is clearly seen that managerial ownership has significant positive influences on the firm performance. However, institutional ownership shows no significant influences. The Probability value of the model shows that the model is significant at 1% level of significance. However, the adjusted R-squared value (0.136902) shows that the model is not best fit. This problem can be solved by incorporating more variables such as age of the business, experiences of the boards, sales etc. into the model. The only intervening variable leverage shows no significant impact on firm performance. This is because there is possibility that the selected companies have selected the internal sources for financing. Besides, some previous studies have shown that the decision to introduce more debt in the Leverage is influenced by the firm value. Firms usually go for debt financing when they see that debt will increase the firm value (Frank & Goyal, 2008).

6. Implications of the Study

This study contributes to the existing knowledge base by finding the role of ownership structure in the effect of product diversification strategy on the firm performance. It has been found that the managerial ownership has significant influences on the effect of product diversification. Board of Directors directly influences the managerial decision and hinders the normal decision-making process. Managements influence has twofold effects. If the management considers the ubiquitous interest over their self-interest, then the influences have positive significance. On the contrary, if the management considers self-interest over the firms overall interest, the resulting effect is increase agency conflict among the stakeholders. Therefore, strong laws and regulations should be formulated to observe the influences of managements in the decision-making process of the firms.

7. Conclusion

The initial goal of the study was to investigate how ownership structure modifies the impact of diversification on firm performance. Theoretically, it is correct that a company's diversification strategy is depending on the firm's worth and independent of any impacts from the owners. However, in actuality, the role of the owners is crucial in deciding whether a firm will take diversification strategy or not and, ultimately, the performance of the business. This study was carried out to look at the actual situation of the aforementioned setting in Bangladesh's publicly traded companies. It has been discovered via the use of various statistical techniques that managerial Ownership has appreciable influences on the impact of diversification on the firm performance whereas, institutional ownership shows no significant influences on the impact of diversification on firm performance.

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Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 40-71)

Application of Murabahah Mode of Financing by Islamic Banks of Bangladesh: Issues and Recommendations

- Md. Mahabbat Hossain, Ph.D.*
- Md. Atiqur Rahman Khan Khadem**
- Mezbah Uddin Ahmed***

Abstract

Murabahah is a sale contract whereby the seller adds a markup with cost and discloses the amounts to the buyer. Islamic banks apply this concept to finance their customers on a short- and long-term basis. In fact, about 70 per cent of the total investments of the Islamic banks in Bangladesh is based on the Murabahah concept. However, the application of this concept varies from bank to bank and product to product. Some of the practices face heavy criticism from different stakeholders. This research aims to identify the application of Murabahah by the Islamic banks in Bangladesh in offering various investment products and compare these practices with the Shari'ah requirements of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and other reputed Shari'ah authorities. The research adopted a content analysis approach whereby the Murabahah contract documents of all full-fledged Islamic banks in Bangladesh are examined. The research further conducted interviews of Islamic banking practitioners to establish the process flow of different Murabahah-based investment products and conducted focus group discussions to validate the findings. The research finds the scope for improvements that the Islamic banks of Bangladesh may consider in achieving greater compliance with the AAOIFI Shari'ah standards. The research also proposes relevant recommendations for consideration of the Islamic banks of Bangladesh. The findings and recommendations of the research would be a reference for the Shari'ah governance functions of Islamic banks including the Shari'ah supervisory boards in identifying the potential weaknesses and to take steps in addressing those weaknesses.

Keywords: Murabahah, Islamic Banking, Shari'ah, Investments.
JEL Classification: G21

* Md. Mahabbat Hossain, *Ph.D., DIB, CIPA, CSAA* is an Associate Professor, Bangladesh Institute of Bank Management (BIBM), Bangladesh, Email: mahabbat@bibm.org.bd; **Md. Atiqur Rahman Khan Khadem *CSAA* is a Vice President, Islami Bank Bangladesh Limited, Bangladesh, Email: nesaratiq@gmail.com; ***Mezbah Uddin Ahmed, *FCCA, MIBF, CIPA, CSAA* is a Researcher, ISRA Research Management Centre, INCEIF University, Malaysia, Email: mezbah-isra@inceif.org. The views expressed in this paper are the authors' own.

1. Introduction

Murabahah is a trust-based sale contract whereby the seller discloses cost of goods sold to the customer and adds an agreed markup over the cost in determining the selling price. In other words, the customer in a Murabahah knows the cost at which the seller has acquired the goods, and both parties agree on the amount of markup added to the cost. Disclosure of cost and adding of markup are the key features of a Murabahah contract that distinguishes it from other types of sale contracts. Deferred payment is not an essential feature of Murabahah. However, this is a common feature of the Murabahah practiced by the Islamic banks, and this results a debt after execution of the Murabahah contract. Hence, Murabahah (although a sale contract) is frequently referred to as a debt financing (Miah & Suzuki, 2020).

In case of Murabahah, the subject matter must be in existence at the time of contract. Besides, the seller should have ownership and possession (either physical or constructive) on the subject matter. Therefore, sequential steps need to be followed by the banker and customer to complete a Shariah compliant process.

Bai-Muajjal is a form of adaptation of Murabahah by some Islamic banks in Bangladesh. 'Muajjal' is not a contract, rather it refers to the deferred payment feature in a sale contract that could be executed based on a Murabahah or Musawamah. Unlike in Murabahah, in Musawamah, the seller is not required to disclose its cost and markup separately. Otherwise, they bear the same Shari'ah rulings in terms of the other aspects of the contract. This means that Bai-Muajjal bears the same Shari'ah rulings as Murabahah, except that the requirement of cost and markup disclosure is not there if it is executed based on Musawamah. The 'Murabahah' term used in this research includes 'Bai-Muajjal' as well, unless the context requires an otherwise statement. It is also noted that 'Bai-Muajjal' may be termed as 'Bai Bithaman Ajil'.

Murabahah is the primary mode of financing not only for the Islamic banks in Bangladesh, but also in other countries. Yousef (2004) while discussing the 'Murabahah syndrome' of Islamic banks, identified that the share of Murabahah

in total financing is 67 per cent in Middle East and North Africa, 44.7 per cent in East Asia, 67.5 in South Asia, and 48.4 in Sub-Saharan Africa. He has examined financial statements of 81 Islamic banks and financial institutions for the years 1994–95. In Malaysia, as of June 2022, Murabahah (inclusive of Bai Bithaman Ajil, which is similar to Bai al-Muajjal) represents 54 per cent of total financing (Bank Negara Malaysia, 2022). In Bangladesh, as of March 2022, Murabahah (inclusive of Bai al-Muajjal) represents 68.3 per cent of total financing (Bangladesh Bank, 2022).

As Murabahah is an important and widely used finance mode in Islamic banking, it is essential that the practice should be in line with Shari'ah. It is necessary to ensure that the underline product must be Shari'ah compliant. There are specific requirements that are to be followed in determining price and its disclosure. More on that, a sequential process needs to be implemented for avoiding Shari'ah violation. Therefore, the current study is concluded to observed the application of Murabahah in the banking sector of Bangladesh.

1.1 Objective and Scope of the Study

Shari'ah compliance is a major concern of Islamic banking stakeholders. In different platforms, may raise questions regarding the Shari'ah compliance status of Islamic banking activities. The research examined the application of Murabahah as it represents the majority share of the financing (in Bangladesh, referred to as 'investments') activities of the Islamic banks. The objective of this paper is to examine how Murabahah is being applied by the Islamic banks in Bangladesh. This research aims to identify the application of Murabahah by the Islamic banks in Bangladesh in offering various investment products and compare these practices with the Shari'ah requirements of the Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) and other reputed Shari'ah authorities.

The Islamic banks also often face criticism due to their heavy dependence on Murabahah as it results a debt. Noting that Murabahah is a Shari'ah-compliant concept and there is no preference of one concept over another in the Shari'ah, the objective of this paper is not to discuss the merits and demerits of applying

Murabahah. The research paper also does not cover the application of Murabahah in Tawarruq (Monetization) or commodity Murabahah as it is not generally practiced in Bangladesh.

1.2 Research Methodology

The research adopted a content analysis approach whereby the Murabahah contract documents of all full-fledged Islamic banks in Bangladesh are examined. The research further conducted interviews of 57 Islamic banking practitioners to establish the process flow of different Murabahah-based investment products and different aspects of their operations. Furthermore, the study conducted focus group discussions to validate the findings from the interviews. Besides, an opinion survey has been conducted on a 10-point scale regarding different issues on the application of Murabahah in Bangladesh. More on that, some secondary data have been collected from different publications of Bangladesh Bank (BB), Islamic Financial Services Board (IFSB), Bank Negara Malaysia (BNM) and State Bank of Pakistan (SBP) to depict the financing portfolio of the sector. The research proposes recommendations for the Islamic banking industry to consider improving the Murabahah-based investments and enhancing Shari'ah compliance.

2. Literature on Murabahah

2.1 Legality of Murabahah

The term 'Murabaḥah' is derived from 'Ribh' meaning profit and it was originally a term of Fiqh (Islamic jurisprudence) for a sales contract where the buyer and seller agree on the markup (Usmani, 1998). Murabahah, as a part of commercial transaction (Muamalat), is generally permissible (ISRA, 2020). Islamic jurisprudence literature indicates that the legitimacy of Murabahah is based on the consent of the majority of Muslim jurists (ISRA, 2016). Therefore, Murabahah is permissible mode of contract if it does not violate its own principles. There are several Quranic verse and authentic Hadith in favor of trading. Allah (SWA) says,

> Those who consume Riba cannot stand [on the Day of Resurrection] except as one stands who is being beaten by Satan into insanity. That is because they say, "Trade is [just] like Riba." But Allāh has permitted trade and has forbidden Riba. So, whoever has received an admonition from his Lord and desists may have what is past, and his affair rests with Allāh. But whoever returns [to dealing in Riba] - those are the companions of the Fire; they will abide eternally therein" (Surah Al-Baqarah: 2/275).

Allah (SWT) given us a detail guideline about credit transactions in the Holy Quran (Surah Al-Baqarah: 2/282). In different other verses of the Quran, Allah (SWT) says,

> "O believers! Do not devour one another's wealth illegally, but rather trade by mutual consent… (Surah An Nisa: 4/29). "..by men who are not distracted —either by buying or selling—from Allah's remembrance, or performing prayer, or paying alms-tax. They fear a Day when hearts and eyes will tremble…" (Surah An Nur: 24/37).

Abu Sa'eed narrated that the Prophet (SWS) said: The truthful, trustworthy merchant is with the Prophets, the truthful, and the martyrs. (Sunan at-Tirmidhi, 1209: This Hadith is Hasan). Hakim b. Hazim (Allah be pleased with him) reported Allah's Messenger (SWS) as saying: both parties in a business transaction have the right to annul it so long as they have not separated; and if they speak the truth and make everything clear they will be blessed in their transaction; but if they tell a lie and conceal anything the blessing on their transaction will be blotted out (Sahih Muslim, 3715).

2.2 The Murabahah Concept

Generally, buying/selling is defined as an exchange of a thing of value by another thing of value with mutual consent. Shari'ah scholars has pinpointed some governing rules related with Murabahah contract. As a general principle, the item to be traded should not be a prohibited goods/services e.g., pig. Besides, the subject of sale must be a property of value in the eye of Shari'ah. The delivery to the buyer of the sold item must be certain and should not depend on a contingency or chance. The subject matter of sale contract must be specifically

known and identified to the buyer. It may be through pointing (sale as it is basis) or by detailed specification, which can distinguish the item from others not sold.

At the time of Murabahah agreement, the subject of sale must be existed. Therefore, a thing which has not yet come into existence cannot be sold. Furthermore, the seller must have ownership on the item before onward selling it to another customer. Nevertheless, only ownership on the item is not sufficient. The seller should also have possession (either physical or constructive) of the subject matter. Constructive possession means possession of an item where the possessor has not taken the physical delivery of the commodity; however, the commodity has come into his control and all the rights and liabilities of the commodity are passed on to the possessor, including the risk of its impairment. It is noted that goods/services may be purchased by oneself or through agent. A sale is executed through exchanging offer and acceptance. For fixing selling price, the cost must be determined separately in case of Murabahah. The certainty of price is a necessary condition for the validity of sale and it must be known to both contracting parties. The sale must be absolute, instant and unconditional. Therefore, a sale attributed to a future date or a sale contingent on a future event is void a void contract as Shari'ah. However, unilateral promise to execute sale contract in the future is permissible. A summary of basic rules of Murabahah contract is presented in Box-1.

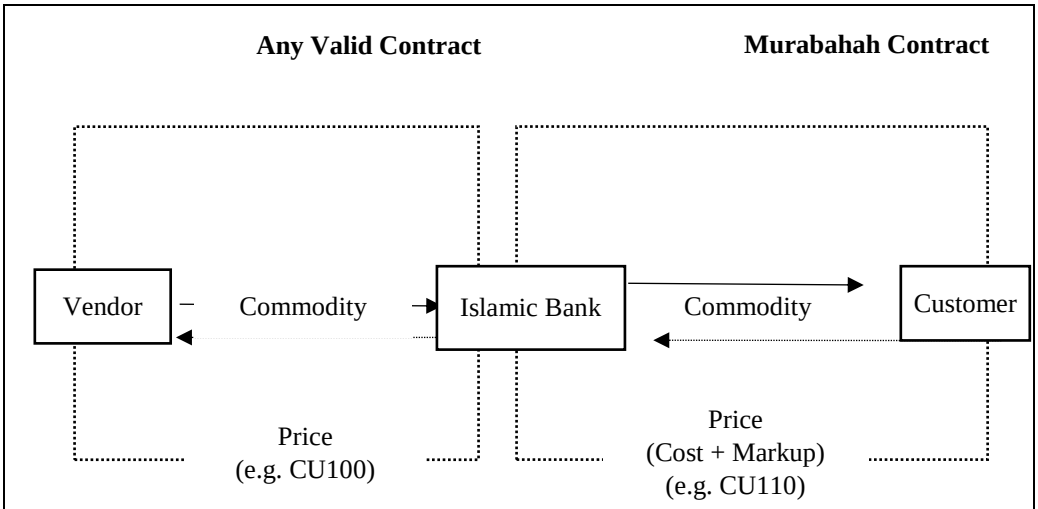
Box-1: A Summary of Basic Rules of Murabahah

Rule 1:	Permissible goods .
Rule 2:	The subject matter of the sale contract must be specifically known and identified to the buyer.
Rule 3:	Existence, ownership, and possession of goods at the time of Murabahah contract. However, this is not a condition at the time of promise.
Rule 4:	The delivery to the buyer of the sold item must be certain (should not depend on a contingency or chance).
Rule 5:	The sale must be absolute, instant, and unconditional.
Rule 6:	The sale is executed through exchange of offer and acceptance.
Rule 7:	The cost of the seller must be determined and disclosed.
Rule 8:	The certainty of price is a necessary condition for the validity of the sale. It must be known to both parties and cannot be varied after the contract is executed.
Rule 9:	The transaction must be genuine, i.e., there should be genuine buy and sell of the subject matter, not just singing of some documents.

Source: Authors' Compilation

Normally, a seller buys goods for known and unknown customers and bears the ownership risks. The ownership risks include risk of physical damage, fall in market price and not finding a customer, etc. However, as a financial institution, the Islamic banks minimize the ownership risks by purchasing goods only when there is a specific purchase order. This means that an Islamic bank involve in a Murabahah transaction only when a customer approaches the bank with a purchase order for a specific asset. This type of Murabahah is known as 'banking Murabahah' or 'Murabahah to the purchase orderer' or MPO. Figure-1 shows modus operandi of an MPO.

Figure 1: Modus Operandi of a Murabahah to the Purchase Orderer



A customer approached an Islamic bank to purchase a commodity. Based on the specifications of the customer, the Islamic bank purchased the commodity from a vendor (may be specified by the customer) for CU100. The Islamic bank discloses its cost in acquiring the commodity, and agreed with the customer on a markup of CU10, resulting a selling price of CU110. From this transaction, the Islamic bank made a profit of CU10. An important Shari'ah rule to observe in a sale contract is that the seller cannot sale what he does not own. Hence, a Murabahah to be valid, the Islamic bank first has to take ownership of the asset before it is sold to the customer.

Source: Authors' Compilation

Depending on the commitment of the purchase orderer, the Murabahah to purchase orderer is divided into two types – (i) purchase orderer is not obliged to fulfil his promise, and (ii) Purchase orderer is obliged to fulfil his promise.

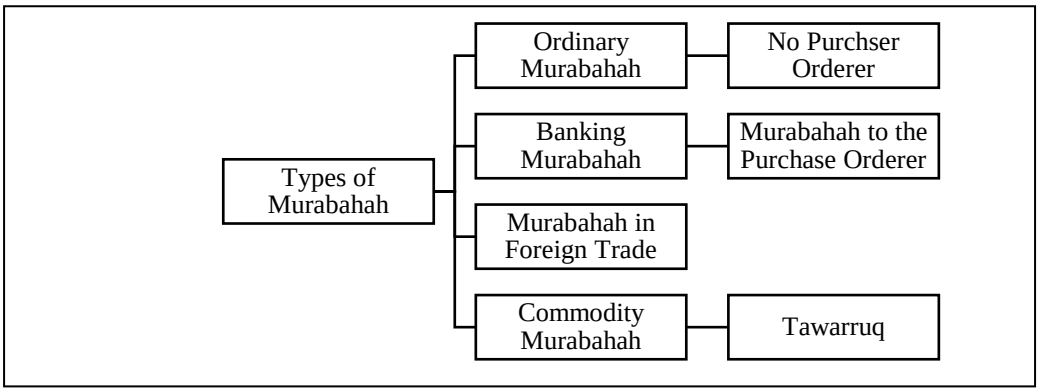
If the purchase orderer (i.e. customer) is not obliged to fulfil his promise, the Islamic bank bears the full ownership risks. The Islamic bank do not have recourse to the customer if he declines to purchase the asset after the Islamic bank taking ownership of the asset. Any deposit paid by the customer shall be returned in full. In this case, the Islamic bank will either have to return the asset to its original supplier or to find another customer who wishes to purchase the same asset. Returning to the original supplier or finding a new customer may result in additional costs for the Islamic bank, including returning or selling at a lower price than the original purchase price. Any loss arising due to the customer dishonoring the promise, shall be borne by the Islamic bank in full. For these obvious reasons, the Islamic banks do not prefer this type of Murabahah to the purchase orderer. In fact, this type of promise is not being practiced in the market.

On the other hand, if the purchase orderer is obliged to fulfill his promise, the Islamic bank have recourse to the customer for any loss suffered if the customer declines to purchase the asset. The Islamic bank can claim its actual loss (not opportunity cost) from the customer. The nature of the damaged claims depends on Hamish Jiddiyyah (security deposit) or Urbun (earnest money).

Nonetheless, selling on credit is not a required feature of a Murabahah contract. The customer can pay on spot or on a deferred basis. The latter can be as a lump sum on a future date or in instalments over a defined period. The primary reason for an Islamic bank being involved in a Murabahah contract is to provide financing to the customer. The customer may not have the full amount to pay for the commodity that he desires to purchase, hence he approaches an Islamic bank for financing. The financing can be for the whole commodity price or a part of it.

Based on the practices of Islamic banks around the world, Murabahah can be divided into four types, which are identified in Figure-2.

Figure 2: Types of Murabahah



2.3 Regulatory Framework for Banking Murabahah in Bangladesh

The Bank Companies Act (BCA), 1991 is the primary law for establishing and operating banking business in Bangladesh, which is applicable for both Islamic and conventional banks. There is no separate law for conducting Islamic banking operations in Bangladesh. Some executive provisions have been incorporated in BCA 1991 to accommodate certain needs of Islamic banking activities, including involving in trading activities. For instance, although Section 9 of BCA 1991 prohibited the conventional banks in direct or indirect buying, selling or bartering of any articles or goods, it exempted the Islamic banks from this prohibition.

The *Guidelines for Islamic Banking* issued by Bangladesh Bank on November 09, 2009 vide BRPD Circular No. 15 of the year is the only specific regulation concerning Islamic banking. The *Guidelines* provided definitions of Bai-Murabahah and Bai-Muajjal and elaborated their application in different Islamic banking scenarios.

2.4 AAOIFI Standards on Murabahah

As identified in Box-2, one of the Shari'ah standards of AAOIFI is specific to Murabahah. However, there are several other standards issued by AAOIFI that also have requirements applicable to Murabahah.

Box 2: A List of Murabahah Related AAOIFI Standards

AAOIFI SS 8: Murabahah
AAOIFI SS 18: Possession
AAOIFI SS 20: Sale of Commodities in Organized Markets
AAOIFI SS 25: Combination of Contracts
AAOIFI SS 30: Monetization (Tawarruq)
AAOIFI SS 31: Controls of Gharar in Financial Transactions
AAOIFI SS 39: Mortgage and Its Contemporary Application
AAOIFI SS 49: Unilateral and Bilateral Promise
AAOIFI SS 53: Arboun (Earnest Money)
AAOIFI FAS 2: Murabaha and Murabaha to the Purchase Orderer (Superseded by FAS 28)
AAOIFI FAS 20: Deferred Payment Sales (Superseded by FAS 28)
AAOIFI FAS 28: Murabaha and Other Deferred Payment Sales

Source: Authors' Compilation

According to AAOIFI SS 8, an Islamic financial institution (IFI) may purchase the item only in response to its customer's wish and application. However, a bilateral promise that is binding on both parties is not permitted. It is also not permitted for the IFI to receive a commitment fee from the customer. Customer may request to purchase the item from a particular supplier. In this regard, the price quotation may be in the name of customer but preferably it would be addressed to the IFI. Nevertheless, if the quotation is addressed to the customer and accepted by him, IFI may not conclude Murabahah on the same item. To avoid Bai al-Inah, IFI may not purchase commodity from the customer or his agent or his parent company. Murabahah on deferred payment is not permitted for gold, silver or currencies. Murabahah on the same commodity which was subject matter of previous transaction between bank and customer is not permissible.

Expenses of preparing documents may be borne by both parties or either as per mutual agreement. It is not permitted for the IFI to charge a fee for credit facility through Murabahah. However, a lead arranger may receive a fee in case of syndicated financing. Besides, IFI may receive a fee for conducting a

feasibility study requested by the customer. All forms of security is allowed in the Murabahah process for securing the payment, provided that they are Shari'ah compliant. It is permissible for IFI to take a sum of money as Hamish Jiddiyyah (security deposit) or Arboun (earnest money) in case of banking Murabahah. However, it is not permitted to transfer ownership risks from IFI to the purchase orderer before execution of Murabahah.

IFI will not sell any item in a Murabahah transaction before the IFI acquires such item. The customer may be a buying agent (only in the case of dire need) but it would be independent from the Murabahah contract. In this regard, the IFI will make payment to the supplier, not to the agent, whenever possible. The first sale would be in the name of IFI, whenever possible. Nonetheless, the IFI will ensure physical or constructive possession of the subject matter before onward sale to the customer and bear ownership risks and insurance cost. Insurance cost during transport may be a part of cost price; however, insurance cost for storage may not be. Therefore, only direct costs will be included in the base amount not indirect expenses like staff salaries.

By taking physical possession by the client as agent, Murabahah will not automatically be executed; rather, an offer and acceptance should be exchanged. The customer is entitled to avail any discount on the purchase price of the bank, i.e., this will reduce the amount payable by the customer. IFI will be responsible for pre-existing hidden defects which appear after the conclusion of the contract; however, Bai al-Bara (sale on 'as is' basis) is permitted. IFI is entitled to include a condition that in case of the customer's refusal to take delivery of the asset within the prescribed time, the institution could revoke the contract or sell the asset to a third party on behalf of the customer. The IFI will be entitled to recover the selling price and have recourse for the balance. Any form of security including guarantee, mortgage, cheque, promissory notes is permissible. However, it is not permissible to delay the transfer of ownership until full payment of the selling price. Nevertheless, IFI may postpone the registration until full payment. It is permissible that the contract of Murabahah consists of an undertaking from the customer to pay an amount of money or a percentage of the debt, on the basis of undertaking to donate it in the event of a delay of his part on due date. The

recovered amount is indeed spent on charitable cause, not for the benefit of the IFI itself. The IFI may give up a part of the selling price for early settlement, but it should not be the contractual agreement. Besides, the customer may settle debt in other currency at spot rate, but it should not be a part of Murabahah agreement.

3. Analysis and Findings

3.1 Application of Murabahah in Different Countries

In the global context, Murabahah is used in 36 percent cases of Islamic financing contracts (Table-3.1). Besides, about 24 percent Islamic financing is concluded under commodity Murabahah/Tawarruq process. Furthermore, Bai Bithaman Ajil is applied in 8.4 percent cases. Therefore, it is evidenced that Islamic financing contracts are highly concentrated in Murabahah and its variations.

Table 3.1: Modes of Islamic Financing Contract in Globe (Based on Available 12 IFSB Member Countries) (%)

SN	Mode	2018	2021
1	Murabahah	36.0	47.4
2	Bai Bithaman Ajil	8.4	-
3	Commodity Murabahah/ Tawarruq	24.2	25.7
4	Ijārah/ Ijārah Muntahia Bittamlīk	13.9	10.2
5	Salam	5.5	4.1
6	Musharakah	3.3	2.8
7	Diminishing Musharakah	1.5	1.3
8	Mudarabah	0.5	0.2
9	Istisna'a	0.4	0.7
10	Wakalah	0.2	0.1
11	Qard Hasan	0.1	0.1
12	Others	5.9	7.4
Total		**100**	**100**

In 1994-95, Share of Murabahah in total financing is 67% in Middle East and North Africa, 44.7% in East Asia, 67.5% South Asia, and 48.4% in Sub-Saharan Africa (Yousef, 2004).

In Malaysia, as of June 2022, Murabahah (inclusive of Bai Bithaman Ajil) represents 54% of total financing (Bank Negara Malaysia, 2022). In Bangladesh, as of March 2022, Murabahah (inclusive of Bai al-Muajjal) represents 68.3% of total financing (Bangladesh Bank, 2022).

Source: https://ifsb.org/psifi_02.php , cited on November 27, 2020 and August 25, 2022

Over the years, application of Murabahah as a mode of financing is increasing in Malaysia (Table-3.2). At the end of December 2021, share of Murabahah financing was more than 45 percent whereas Bay-Bithaman Ajil was about 9 percent. It is noted that Murabahah includes Tawarruq in the Malaysian context.

Table 3.2: Application of Islamic Finance Mode in Investments: Malaysia (%)

	Bayʿ bi thaman ajil	Murabahah	Ijarah	Al-ijarah thumma al-bayʿ	Musharakah	Muḍarabah	Istisna	Others
Dec-14	23.79	25.33	2.42	20.64	6.78	0.02	0.53	20.48
Dec-15	19.21	31.40	2.46	18.22	7.30	0.02	0.57	20.83
Dec-16	15.87	37.18	2.25	16.04	9.26	0.02	0.47	18.91
Dec-17	13.60	39.59	2.14	14.84	10.07	0.01	0.41	19.34
Dec-18	11.56	39.90	1.70	13.02	9.32	0.01	0.23	24.24
Dec-19	10.44	42.08	1.42	11.74	9.36	0.01	0.27	24.68
Dec-20	9.39	44.11	1.25	11.52	9.16	0.02	0.18	24.37
Dec-21	8.54	45.56	1.04	11.27	9.28	0.03	0.14	24.14

Source: BNM (2021).

A completely different picture is observed in Pakistan. They are reducing Murabahah mode of financing in their economy and increasing Mushakakah mechanism (Table-3.3). At the end of December 2021, share of Murabahah and financing in Pakistan was 13.6 percent. It is noted that share of Musharakah (including diminishing Musharakah) is about 60 percent in Pakistan. A comparative position of Murabahah financing is depicted in Table-3.4. Among Bangladesh, Pakistan and Malaysia, Murabahaha financing mode is using much in our country.

Table 3.3: Application of Islamic Finance Mode in Investments: Pakistan (%)

	Murabahah	Ijarah	Musharakah	Diminishing Musharakah	Mudarabah	Salam	Istisna	Others
Dec-14	30.1	7.7	11	32.6	0.1	4.5	8.3	5.6
Dec-15	24.5	6.6	14	31.7	-	5.3	8.6	9.3
Dec-16	15.8	6.8	15.6	34.7	-	4.4	8.4	14.3
Dec-17	13.2	6.4	22	30.7	-	2.8	8.2	16.7
Dec-18	13.6	6.2	19.9	33.3	-	2.4	9.1	15.5
Dec-19	12.9	5.8	19.8	34.2	-	2.6	9.6	14.8
Dec-20	13.7	4.8	22.7	33.6	-	1.9	8.3	15
Dec-21	13.6	4.4	24.9	33.8	-	2	8.3	13

Source: SBP (2021)

Table 3.4: Application of Murabahah (%): Comparison

	Bangladesh			Pakistan	Malaysia		
	Bai al-Murabahah	Bai al-Muajjal	Total	Murabahah	Murābaḥah	Bayʿ bi thaman ājil	Total
14-Dec	44.24	24.72	68.96	30.1	25.33	23.79	49.12
15-Dec	44.47	24.93	69.40	24.5	31.4	19.21	50.61
16-Dec	44.64	25.24	69.88	15.8	37.18	15.87	53.05
17-Dec	43.81	25.17	68.98	13.2	39.59	13.6	53.19
18-Dec	44.33	25.63	69.96	13.6	39.9	11.56	51.46
19-Dec	44.6	23.95	68.55	12.9	42.08	10.44	52.52
20-Dec	44.97	23.76	68.73	13.7	44.11	9.39	53.5
21-Dec	46.39	23.24	69.63	13.6	45.56	8.54	54.1

Source: Authors' compilation

3.2 Application of Murabahah in Bangladesh

Share of Islamic banking industry is increasing in the overall economy of the country (Table-3.5). As per BB report, a total number of 33 banks (Full-fledged 10, Branch-based IBs 09 and Window-based IBs 14) are providing Shari'ah-based banking services in the country (BB, 2022). Some conventional banks have been converted into full-fledged Islamic banks whereas some conventional banks are providing IB services through their branches/windows. At the end of 2021,

Total financing (investment) of IB industry stood at BDT 3,53,448 crore (Table-3.6), which is about 26 percent of the total banking sector of Bangladesh.

Table 3.5: Market Share of Islamic Banking in Bangladesh (%)

Particulars	Share of IBs in Dec. 2017	Share of IBs in Dec. 2018	Share of IBs in Dec. 2019	Share of IBs in Dec. 2020	Share of IBs in Dec. 2021
Total Investment (Loans & Advances)	22.96	23.1	23.14	24.0	25.8
Total Deposits	20.39	20.1	20.96	21.6	23.5
Total Assets	19.29	19.1	19.58	20.1	22.1
Total Liabilities	19.6	19.4	19.85	20.4	22.3
Total Equity	15.22	15.6	15.57	15.4	17.8
Total Liabilities and Equity	19.29	19.1	19.58	20.1	22.1
Off-Balance Sheet Items	11.2	10.6	12.08	12.2	12.5
Profit Income (Interest Income)	22.63	34.31	24.32	26.3	28.6
Profit (Interest) Paid to Depositor	20.44	23.13	23.04	23.2	25.1
Non-Profit Income	8.32	9.25	10.1	7.7	8.8
Operating Expenses	16.21	17.12	18	18.1	19.7
Net Profit After Tax	19.15	38.32	24.01	36.7	40.4
Remittances	36.14*	35.38*	35.34*	40.51*	49.18*
Total Number of Bank Branches	11.52	12.06	13.05	14.25	19.02*
Total Agricultural Credit	8.87	7.01	2.57*	13.41*	16.94*
Total Number of Employees in IB (No.)	30606*	33027*	35906*	38784*	45260*

Source: Financial Stability Report, BB; *Quarterly Report on Development of IB in BD, BB

Table 3.6: Islamic Banking Investments (BDT Crore) and Its Growth (%)

	Full-fledged IB		IB Branches		IB Windows		Total Investments of IBs		All Bank Credits	
	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)
Dec-14	1,21,321	-	4,138	-	1,665	-	1,27,124	-	5,07,627	-
Dec-15	1,34,990	11.27	6,148	48.59	2,063	23.9	1,43,201	12.65	6,17,474	21.64

	Full-fledged IB		IB Branches		IB Windows		Total Investments of IBs		All Bank Credits	
	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)	Amount	Growth (%)
Dec-16	1,60,831	19.14	5,186	-15.65	2,941	42.52	1,68,958	17.99	7,13,113	15.49
Dec-17	1,91,279	18.93	5,583	7.66	4,237	44.1	2,01,100	19.02	8,44,436	18.42
Dec-18	2,19,797	14.91	6,162	10.36	4,949	16.8	2,30,907	14.82	9,60,462	13.74
Dec-19	2,49,885	13.69	7,494	21.62	5,373	8.58	2,62,752	13.79	10,58,707	10.23
Dec-20	2,79,073	11.68	7,753	3.45	7,269	35.27	2,94,094	11.93	11,44,907	8.14
Dec-21	3,37,668	21	8,242	6.31	7,538	3.71	3,53,448	20.18	12,67,561	10.71

Source: Quarterly Report on Development of Islamic Banking in Bangladesh, BB

In Bangladesh, no trade-based contract is applied for deposit mobilization by the Islamic banking community (Table-3.7). However, some other jurisdictions allow Tawarruq, which is a Bai mechanism. On the other hand, more than 46 percent investment (financing) is concluded under Bai-Murabahah mode in Islamic banking market of Bangladesh (Table 3.8). In addition to this, Bai-Muajjal principle is followed in about 23 percent financing contract. Therefore, Bangladeshi banking industry is line with global practices considering the application of Murabahah modes. However, there may be differences in operations of Murabahah in different countries and jurisdictions.

Table 3.7: Islamic Banking Deposits by Contracts (%)

Year	Wadiah CA Deposits	Mudaraba h Savings Bond	Mudaraba h Special Savings (Pension)	Mudaraba h Hajj Deposits	Mudaraba h Term Deposits	Mudaraba h Special Notice Deposits	Mudaraba h Savings Deposits	Other Deposits	Total
Dec-14	4.00	1.00	9.00	0.00	49.00	3.00	17.00	17.00	100
Dec-15	3.83	1.02	7.80	1.74	48.46	2.94	18.32	15.79	100
Dec-16	4.05	0.90	8.98	0.28	47.35	3.20	18.61	16.63	100
Dec-17	4.41	0.75	8.71	0.22	47.45	3.76	18.38	16.32	100
Dec-18	3.89	0.66	8.70	0.21	49.23	3.68	18.38	15.25	100
Dec-19	3.58	0.58	8.62	0.22	48.21	3.94	17.60	17.23	100
Dec-20	3.91	0.48	9.32	0.23	47.04	4.67	18.77	15.58	100
Dec-21	4.71	0.37	9.63	0.19	45.55	4.80	19.39	15.36	100

Source: Quarterly Report on Development of Islamic Banking in Bangladesh, BB

Table 3.8: Islamic Banking Investment (Financing) by Contracts (%)

	Qard (Secured)	Bai al-Murabahah	Bai al-Muajjal	Bai al-Salam	Bai al-Istisna	Mudarabah	Musharakah	Ijarah/ HPSM	Others	Total
Dec-14	1.33	44.24	24.72	0.86	0.30	0.29	1.32	22.66	4.10	100
Dec-15	1.45	44.47	24.93	0.76	0.30	0.38	1.54	22.62	3.59	100
Dec-16	1.31	44.64	25.24	0.80	0.23	0.32	1.59	22.89	2.98	100
Dec-17	1.32	43.81	25.17	0.96	0.22	0.26	1.53	24.29	2.44	100
Dec-18	1.32	44.33	25.63	0.99	0.07	0.26	1.43	23.39	2.58	100
Dec-19	0.05	44.60	23.95	0.03	1.16	0.32	1.38	23.64	4.87	100
Dec-20	1.67	44.97	23.76	1.29	0.01	0.33	0.92	23.79	3.26	100
Dec-21	1.11	46.39	23.24	1.23	0.02	0.25	0.49	23.30	3.98	100

Source: Quarterly Report on Development of Islamic Banking in Bangladesh, BB

3.3 Contents Analysis of Murabahah Agreement

The research team has reviewed the Murabahah agreements of all full-fledged Islamic banks in Bangladesh to identify the similarity and dissimilarity among the banks of the country. The summary of the findings and remarks are provided in Table-3.9.

Table 3.9: Review of the Murabahah Agreements by Islamic Banks in Bangladesh

Issues of Review	Findings	Remarks
Language of contract	English	Whether all clients are proficient in English to understand the covenant laid down in the agreement?
Mode of agreement	Some banks use both Bai-Murabahah and Bai-Muajjal separately Some banks use either Bai-Murabahah or Bai-Muajjal	There is no issue about the terminology used however, AAOIFI SS 8 allows both cash and credit transactions under Murabahah.
Date of agreement	Found with all banks	
Reference of client's request to purchase the commodity	All banks (Some banks refer to MoU)	Whether mere request/proposal infers to wad or promise? Whether this request/proposal is binding for the client?

Issues of Review	Findings	Remarks
Descriptions of subject matter (Goods/Commodity)	Referred to separate schedule	It is one of the primary rule of Murabahah contract.
Shari'ah permissibility of goods	Found nowhere except with an Islamic bank. Few banks issued separate circular on permissible goods and services.	It is a basic rule for conducting Islamic finance contract.
Mentioning whether goods purchased/ will be purchased	Some banks have only mentioned as purchased goods. Some banks have options as goods purchased/will be purchased	Whether future procurable goods are permissible under Murabahah?
Sale price directly or cost and profit/markup separately	Some banks mention cost and profit/markup separately. Some banks mention sale price directly however, banking software calculate profit separately all the times.	It is important to disclose cost and profit/markup separately if it is a Murabahah agreement. However, it would not be a problem if it is concluded under Musawamah/Muajjal/Bai-Bithaman Ajil mode.
Insurance coverage to be obtained	With the companies approved by banks.	It is important to ensure coverage would be an Islamic Insurance/ Takaful. Besides, Insurance cost should be borne by the owner of the goods.
Delivery of goods to client	With client's acknowledgment to delivery order/purchase schedule	
Compensation clause	Found with all banks except an Islamic bank.	Whether it would be a compensation clause or mandatory charity clause in case of willful defaulter?
Maturity of the agreement	Found with all banks (an Islamic bank has mentioned it in a separate clause).	
Dispute management	Respective bank's decision is final.	Is there any option to improve the clause to make it more logical in line with Shari'ah?

Source: Authors' Compilation

3.4 Interview and Survey Findings

In order to know the Murabahah process and practices in the banking community of Bangladesh, the research team has conducted interview of Shari'ah scholars working in the Shari'ah Supervisory Committee (SSC) of different banks, Islamic finance professionals and consultants, internal auditors and internal Shari'ah auditors (Muraqib), heads of Islamic banking division of conventional banks, executives posted in the branches of full-fledged Islamic banks and Islamic banking branches/windows of conventional banks. Different aspects Murabahah operations have been discussed with them (A list of discussed points is presented in Box-3). Some findings of the interviews have been validated through focus group discussions participated by a good number of Islamic Finance Professionals (IFPs).

Box 3: A List of Points related with Murabahah Operations Discussed with IFPs

1. Ensuring transaction only for Shari'ah compliant products/services.
2. Preventing fictitious transactions based on cooked voucher without exchanging product.
3. Taking ownership on goods by IFI before onward sale to the customer.
4. Ensuring possession by IFI before onward sale to the customer.
5. Ensuring execution of proper offer and acceptance between IFI and customer.
6. Appointing customer as an agent without searching other options.
7. Disbursing fund to the customer's account without searching other options.
8. Transferring ownership related risk and cost to the customer.
9. Settlement of old deal by new one without buying and selling anything.
10. Rescheduling Murabahah receivable by creating an artificial deal with new markup.
11. Cancelling old Murabahah contract and concluding a fresh contract with revised markup on same items.
12. Taking over loan of an Islamic bank applying Murabahah mode with or without having tangible products.
13. Taking over loan of a conventional bank applying Murabahah mode with or without having products.
14. Creating Murabahah without existence of product in case of force loan.
15. Concluding the "Undertaking to Purchase" and "Murabahah Agreement" at a time.
16. Accepting voucher/price quotation addressed to the customer.
17. Preventing mismatch between investment (financing) amount and purchase voucher.

18. Conversion of Murabahah financing (working capital) in to long-term finance e.g., HPSM.
19. Paying off client's existing liability caused for credit purchase by creating a Murabahah deal.
20. Ensuring proper and transparent calculation process of cost and markup for Murabahah.
21. Granting rebate to the customer in all the cases of early settlement.
22. Asking LC commission from the client in case of import financing under Murabahah mode.
23. Ensuring transparency for applied mode on the margin kept by the client with the bank as security deposit.
24. Asking for processing fee from the client for granting the credit.
25. Incorporating compensation (mandatory charity) clause ignoring force majeure.
26. Transferring a part of compensation (mandatory charity) to the bank's income.
27. Failing to ensure the sequence of Murabahah execution process.
28. Ensuring compliance with prudential regulations of BB in regard to pricing, reporting, rescheduling, etc.
29. Developing IFPs for Shari'ah compliance operations and conducting research for innovation.
30. Ensuring uniformity in the perception and application of Murabahah, Muajjal and Bai-Bithaman Ajil.

Source: Authors' Compilation

In most of the cases, IFI ensures that the subject matter should not be a prohibited goods. Sometimes it is mentioned in the Murabahah agreement form and in some other cases, banks issue separate circular for the operational officials for compliance. In very few cases, it is discovered by the Muraqib that sold item was not Shari'ah compliant. Islamic banking and finance at large is related with real economy. Therefore, IFI ensures genuine transaction during the financing process however, in some cases, violation is observed in operational procedure. This type of violation may be observed through fictitious transactions based on cooked voucher without exchanging product, settlement of old deal by new one without buying and selling anything, rescheduling Murabahah receivable by creating an artificial deal with new markup, cancelling old Murabahah contract and concluding a fresh contract with revised markup on same items or creating Murabahah receivable without existence of product in case of force loan.

Taking ownership and possession on goods by IFI before onward sale to the customer and ensuring proper execution of offer and acceptance between IFI and

customer are basic rules for Murabahah contract. If the Murabahah agreement is concluded on the goods to be purchased, then these basic principles are not complied. Sometimes it is not possible for the IFI to separate the purchased goods from other unsold goods of the suppliers before concluding Murabahah contract. Failing to ensure the execution-sequence of different contracts and documents related with Murabahah is another possible cause for such limitation.

There is no harm if a customer is appointed as buying agent ensuring genuine transactions following all principles of the particular mode of financing. However, there is a possibility of fictitious transaction if the customers are appointed as agents without strong monitoring and supervision by the IFI. Therefore, it is preferable that IFI will not appoint its customer as buying agent searching other options. Similarly, disbursing fund to the customer's account for the Murabahah in all the cases is not desirable. It is a beauty of Islamic contract that an owner will bear the risk and cost related with the goods. Therefore, an IFI may not transfer ownership related risk and cost to the customer before concluding the Murabahah contract.

In the banking system, there is a practice of loan take-over by a bank for from other bank and financial institutions. However, Islamic banks need to ensure Shari'ah compliance in this process. Generally, an IFI does not pay for interest in case of taking over a loan from a conventional bank. Besides, Islamic banks need to ensure the availability of existing goods for applying Murabahah mode. Furthermore, it is important to ensure proper documentation and transaction procedure. It is not accepted if the loan takeover process is concluded under Murabahah mode without having any goods. The IFI should also be careful about Bai-al-Inah. Different alternative approaches have been shared with the research team by the IFPs, which are summarized in the following Box-4.

Box 4: A Summary of Loan Take-over Process

Suppose Bank A has provided a working capital facility of CU 100,000 to Customer X creating hypothecation charge on the floating inventory of the customer. After certain time, Bank B is wishing to take over the loan. The loan take-over process may be concluded in the following ways:

Approach I:

1. Customer X will appoint the Bank A as selling agent to sell the existing available inventory to the Bank B.
2. Bank B will conduct valuation of the available inventory to ensure the reasonable value of the inventory.
3. A tri-party sale agreement will be concluded between Customer X and Bank B in the presence of agent Bank A.
4. Ownership of the inventory will be passed to the Bank B where payment will be made to Bank A for the settlement of existing debt. If the Bank A is a conventional bank, Bank B will not pay the amount charged as interest by the bank. It will be arranged by the Customer X.
5. Bank B will sell the inventory to the Customer X creating a Murabahah receivable.
6. Customer X will pay the dues to the Bank B as per the Murabahah agreement.

Approach II:

1. Bank A will take the ownership on the inventory of Customer X based on the hypothecation charged created over it.
2. Bank B will conduct valuation of the available inventory to ensure the reasonable value of the inventory.
3. Bank A will sell the inventory to Bank B for settling the dues of Customer X.
4. Ownership of the inventory will be passed to the Bank B where payment will be made to Bank A. If the Bank A is a conventional bank, Bank B will not pay the amount charged as interest by the bank. It will be arranged by the Customer X.
5. Bank B will sell the inventory to the Customer X creating a Murabahah receivable.
6. Customer X will pay the dues to the Bank B as per the Murabahah agreement.

Approach III:

1. Bank B will ask the Customer X to settle the dues with Bank A from his own arrangement.
2. Bank B will create a fresh Murabahah deal with the Customer X for fulfilling upcoming working capital requirements of the client.
3. Customer X will pay the dues to the Bank B as per the Murabahah agreement.

Source: Authors' Compilation based on Interview

As per AAOIFI Shari'ah Standard, it is allowed to accept a voucher/price quotation addressed to the customer. However, it is preferable that the voucher/price quotation will be in the name of IFI, as the goods is purchased or will be purchased by it. Therefore, it is not appropriate that the voucher for purchased goods from the supplier under the MPO will be in the name of the customer all the cases. Occasionally, it is observed that there is a mismatch between investment (financing) amount and voucher figure.

It is not expected that Murabahah receivable (working capital financing) for inventory will be converted in to long-term financing under HPSM or Ijarah mode without ensuring tangible physical asset. Paying off client's existing liability caused for credit purchase by creating a Murabahah deal is also prohibited. Ensuring proper and transparent calculation process of cost and markup for Murabahah is desirable. In the Murabahah mode, IFI sells goods to the customer on credit. As a business deal, the IFI will not demand for processing fee of the credit Murabahah application rather it may be considered in the negotiation process of markup.

An IFI, at its own discretion, may grant rebate to the customer to expedite the recovery process. However, it should not be a right/claim of the customer and IFI should not make it a customary practice in all the cases of early settlement. Incorporating a compensation (mandatory charity) clause in the Murabahah agreement ignoring force majeure preferable. Besides, an IFI should not transfer any amount of the compensation (mandatory charity) to its income.

For a business purpose, a bank may not use its own Import Registration Certificates (IRC) therefore, IFIs use customer's IRC to import goods under Murabahah letter of credit (LC). Hence, an IFI needs to think about the LC commission charged to the customer where the IFI is going to be the owner of the imported goods. Though it is argued that there are two separate agreements, Wakalah and Murabahah, between the IFI and client in this process. Furthermore, it is important to ensure transparency for applied mode on the margin kept by the client with the bank as security deposit. Both Wadiah and Mudarabah mode are permissible for Hamish Jiddiyah (security deposit) however, it should be transparent and known to the parties. Perception variation is observed among the

bankers about the concept and application of Murabahah, Muajjal and Bai-Bithaman Ajil in the Bangladeshi Islamic finance industry.

Most of the respondents acknowledged that there is a dearth of skilled Islamic finance professionals having Shari'ah and operational banking expertise. BB stated in its guidelines that the board of directors (BoD) of the respective banks will be responsible to ensure Shari'ah compliant banking operations. Therefore, the board of the banks should be constituted with directors having requisite knowledge and expertise in Islamic Jurisprudence. Without having knowledge and expertise in Islamic Jurisprudence of the senior management team (SMT), it is difficult to implement Shari'ah principles in the operational level. Consequently, BB expected that the CEO of the bank would be a professional having at least three years Islamic banking experience. As per the BB guidelines, it is necessary to have a skill manpower-pool for getting Islamic banking license. Furthermore, members of the Shari'ah Supervisory Committee (SSC) should have knowledge on Islamic banking, economics and commercial jurisprudence for an effective Shari'ah governance. In these contexts, there is no alternative to professional development programs in the area of Islamic banking and finance. It may be a long-term academic degree, medium-term diploma/certification program, or short-term training/workshop and seminar/conference specially designed for BoD, SMT, Member of SSC and operational executives. Capacity development should be frequently and an ever-ending arrangement. A summary of opinions provided by Islamic finance professionals is presented in Table 3.10.

Table 3.10: Application of Murabahah for Financing: IFPs opinion

[Opinion of IFPs on Murabahah Operations in Bangladesh in a Ten-point Scale (10= Highest and 1=Lowest), n=369]

S/n	Aspects on Murabahah	Shari'ah Importance	Probability of Occurrence
1.	Ensuring that the transaction is only for Shari'ah compliant products or services (Probability of non-compliant goods).	10	4.39
2.	Ensuring that the transaction is for genuine buy and sell (Probability of fake documents).	9.83	4.61

S/n	Aspects on Murabahah	Shari'ah Importance	Probability of Occurrence
3.	Obtaining ownership of goods by the Islamic bank before sale to the customer (Probability of sale before getting ownership).	8.42	3.68
4.	Obtaining possession (actual or constructive) by the Islamic bank before sale to the customer (Probability of sale before obtaining possession).	9..00	8.78
5.	Bearing risk of the purchased goods by the Islamic bank before sale to the customer (Probability of transferring risk to the customer).	7.43	8.45
6.	Execution of the sale contract only after execution of the purchase contract for the same good (Probability of sale before purchase)	7.80	7.51
7.	Passing of a significant time between purchase of goods by the bank and sale to the customer (Probability of sale and purchase at a time).	3.36	9.85
8.	Ensuring proper execution of offer and acceptance between Islamic bank and customer (Probability of non-exchanging)	9.24	9.24
9.	Disclosure on costs to customer on a break down basis i.e. providing details of each cost components (Probability of lump sum costing)	3.26	4.26
10.	Appointing customer as buying agent for goods to be sold by the Islamic bank to the same customer (Probability of happening so).	4.36	8.72
11.	Disbursing money to the customer's account by IFI without resorting other options (Probability of happening so).	5.20	8.54
12.	Obtaining evidences by IFI directly from the supplier where the customer is appointed as agent (Probability of happening so).	2.38	8.54
13.	Conducting a post-sale inspection at the customer's premises to ensure that the sale was genuine (Probability of non-happening so).	5.00	9.83
14.	Settlement of old deal by new one without buying and selling anything (Probability of happening so).	9.46	4.23
15.	Settlement of old deal by new one by buying and selling the already sold goods (Probability of happening so).	9.46	5.24
16.	Rescheduling Murabahah receivable by creating an artificial deal with new markup (Probability of happening so).	9.46	4.23
17.	Rescheduling or restructuring by cancelling old Murabahah contract and executing a new contract with revised markup using the same items (Probability of happening so).	9.46	4.23

S/n	Aspects on Murabahah	Shari'ah Importance	Probability of Occurrence
18.	Execution of an artificial Murabahah without existence or valid buy and sale of a product in case of force loan (Probability of happening so).	10	3.29
19.	Conversion of Murabahah financing (working capital) in to long-term finance e.g., HPSM (Probability of happening so).	9.12	2.15
20.	Concluding the "Undertaking to Purchase" and "Murabahah Agreement" at a time i.e. in the same sitting (Probability of happening so).	2.52	2.52
21.	Refinancing (takeover) of debt due to another Islamic bank applying Murabahah using the assets of the original transaction (Probability of happening so).	4.52	2.52
22.	Refinancing of debt due to another Islamic bank applying Murabahah without using any assets (Probability of happening so).	9.83	1.27
23.	Refinancing (takeover) of loan due to a conventional bank applying Murabahah using existing assets of the customer (Probability of happening so).	9.83	1.27
24.	Refinancing (takeover) of loan due to a conventional bank applying Murabahah using new assets that yet to be purchased by the customer (Probability of happening so).	10	1.27
25.	Paying off client's existing liability caused for credit purchase by creating a Murabahah deal (Probability of happening so).	9.83	1.27
26.	Accepting voucher/price quotation addressed to the customer (Probability of happening so).	1.27	5.64
27.	Mismatch between investment (financing) amount and purchase voucher (Probability of happening so).	6.47	5.46
28.	Granting rebate to the customer in the case of early settlement (Probability of happening so).	3.21	9.83
29.	Imposing LC commission in case of import financing under Murabahah mode (Probability of happening so).	3.31	7.52
30.	Ensuring transparency for applied mode on the margin kept by the client with the bank as security deposit (Probability of non-transparency).	4.03	7.52
31.	Imposing processing fee for granting credit, i.e. sale on a Murabahah basis to the customer (Probability of happening so).	6.41	6.41
32.	Imposing compensation charges in case of delays in payment by the customer (Probability of happening so).	2.35	9.83
33.	Recognizing a part of compensation as the bank's income (Probability of happening so).	9.83	6.42
34.	Failing to ensure the sequence of Murabahah execution process (Probability of happening so).	8.85	6.42

S/n	Aspects on Murabahah	Shari'ah Importance	Probability of Occurrence
35.	Ensuring compliance with prudential regulations of BB in regard to pricing (9% Cap), reporting (Murabahah as continues loan), rescheduling (with additional profit), etc. (Probability of non-compliance).	9.74	4.23
36.	Ensuring that the markup added in Murabahah reflect the market rate for similar financings (Probability of non-happening so).	6.41	1.32
37.	To include the rebate clause in the Murabahah contract so that there is no uncertainty regarding this (Probability of happening so).	4.53	4.53
38.	Differences in the perception and application of Murabahah, Muajjal and Bai-Bithaman Ajil.	1.27	9.85
39.	Developing IFPs for Shari'ah compliance operations and conducting research for innovation (Probability of non-happening so).	6.63	7.52

Source: Survey Data

4. Conclusion and Recommendations

Murabahah is a Shari'ah-compliant concept and there is no preference of one concept over another in the eye of Shari'ah. In banking community, Murabahah is used as a mode of financing not only by the Islamic banks in Bangladesh, but also in other countries. As the majority of financing by IFIs is concluded under Murabahah, it is essential to adhere all Shari'ah rulings relating to the mode to demonstrate the Shari'ah compliance by the Islamic banking industry. Without continuing the existing procedures and approaches in all the cases, there is a need of rigorous research to find out the Shari'ah compliant better approaches and alternatives under the purview of Muamalat considering current banking environment and customers' needs. The banking industry and standard setters may take initiatives to make uniformity in the perception and application of Murabahah, Muajjal and Bai-Bithaman Ajil. The specific recommendations are provided below:

- **Signing all documents in a single sitting:** Banking Murabahah requires a set process to be followed to ensure underlying transactions are Shari'ah compliant. The set process includes: i) promise to purchase (wa'd) from the client, ii) purchase and possession (qabd) by the bank, and finally iii)

conclusion of Murabahah contract against sale of goods and consequent delivery to the client. Therefore, Murabahah financing arrangement consists of a series of documents to be executed at various stages, the sequence and timing of which are very important. A number of issues in Murabahah transactions are to be considered. Proper documentation, its wording, execution time needs to the Shari'ah requirements of a valid Murabahah contract. Therefore, the banks need to ensure that all documents are not signed and concluded in a single sitting. Otherwise, it would be tantamount to conventional financing. It is to be noted that if clients submit all the signed documents at a single time, i.e., promise to purchase, purchase schedule, description of goods, delivery letter and Murabahah agreement, etc. and later on bank executes the same may jeopardize the entire transaction. There is a high degree of possibility of receiving signed documents from the clients aiming to reduce time, cost and other hazards.

- **Appointing client as agent in all the cases**: For avoiding fictitious transaction in the name of Murabahah, it is preferable that purchasing goods from the supplier will be concluded under direct supervision of the IFI. However, it is not doable or realistic for the IFI to purchase commodities by its own in all the cases. Therefore, the issue of appointing agent is arose. Individual bank or the Islamic banking industry may think to find out a mechanism for establishing a third-party agent, who will facilitate goods acquiring process on behalf of the concerned IFI. Without searching any option, it is not preferable that IFI will appoint the client as agent in all the cases. Furthermore, IFI should not credit the amount to the customer's account without resorting other options.

- **Granting rebate as a contractual agreement or customary practice**: Whether rebate could be allowed against early settlement has got mixed views among the scholars of Islamic Jurisprudence. Many of them do not allow rebate for the early settlement in Murabahah transactions to avoid Riba. In practice, for being competitive with the conventional banks, Islamic banks grant rebate to their clients in case they desire to settle dues before granted credit period. If granting rebate is a customary practice, it seems that the credit

amount is linked with the allowed credit period. On the other hand, there is no scope of additional charge for early settlement by the customer.

- **Calculation of cost and profit in a transparent manner:** Murabahah is a sale contract whereby the seller adds a mark-up to cost and discloses the amounts to the buyer. However, the cost includes only directly associated amount with the goods purchased/acquired/produced. No indirect cost will be included there. A mark-up, either an absolute or percentage of cost, must be fixed and known to the buyer. For that reason, an IFI should make the price calculation process transparent to its customer without any ambiguity.

- **Ownership and possession of goods before onward sale**: A seller may not conclude a sale contract of an item without having ownership and possession on it. In the banking Murabahah, IFIs purchase goods from the supplier as per request of the customer. It is essential for the IFI to get the ownership on the goods and take possession before concluding Murabahah agreement with the client on the same item. In this regard, IFI should not show the argument of impossibility, lack of manpower or costing issue.

- **Preventing fictitious transactions:** It is expected that IFIs will adopt a zero-tolerance policy for preventing all fictitious transactions in the name of Murabahah. There is no scope of rollover, settlement of existing liability by a new deal, disbursement of fund to the client's account without buying and selling anything or rescheduling with new markup. Without ensuring this, there will be no difference between a conventional bank and an Islamic bank.

- **Bearing risk and cost before selling by the owner**: When a customer is appointed as buying agent in the Murabahah process, there may tend to transfer ownership related risk and cost to the customer's shoulder. However, Shari'ah does not allow **to** transfer the risk and cost to the agent. It is permissible to sort a mechanism for risk management however, it should be in line with Shari'ah.

- **Loan takeover in Shari'ah compliant way**: There is a possibility of artificial transaction in case of loan takeover process by banks. Besides, an IFI needs

to avoid Inah in the Murabahah-based loan takeover practice. As Inah is not approved by AAOIFI, Bangladeshi Islamic banking industry should not allow this mode.

- **Regulatory issue related with pricing, rescheduling and reporting**: Murabahah transactions fall under continuous loan as per prudential regulation of Bangladesh Bank. As per Shari'ah, rollover is not allowed in case of Murabahah and every sell contract should be independent. Besides, an IFI considers credit period and probability of delayed payment for fixing-up the profit. In the primary agreement with the client, the IFI may impose a higher rate of profit however, the effective rate of recovered amount does not exceed the maximum cap given by the regulator. Besides, rescheduling facility to the customer under Murabahah financing is not feasible for IFIs. Therefore, regulators may address these issues differently from the conventional banks for the IFIs.

- **Financial reporting and disclosures**: Ensuring disclosure and transparency is one of the mottos of Shari'ah. However, nature of contracts and business of an IFI are different from that of a conventional bank. In this regard, AAOIFI has issued a set of Financial Accounting Standards (FASs). A number of jurisdictions have already adopted and implemented these standards. As a good number of banks are providing Islamic financial services, regulatory authority may think to adopt FASs for the Bangladeshi industry.

- **Developing Islamic finance professional**: Considering and acknowledging the needs of capacity development program for different target groups e.g., BoD, Member of SSC, SMT and operational executives, a number of programs should be arranged in each year. Though Bangladesh has started Islamic banking in 1983, the country could not develop an Islamic finance professionals' pool like Malaysia, Indonesia, Pakistan, Bahrain, Jordan, etc. Therefore, it is high time to develop and arrange/offer academic degree, professional diploma/certification program, training/workshop and seminar/conference on a regular basis. In this context, Bangladesh Institute

of Bank Management (BIBM), Central Shariah Board for Islamic Banks of Bangladesh (CSBIB), Bangladesh Bank Training Academy (BBTA) may play role in the national level and private-owned organization may contribute from their end.

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Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 72-96)

Financial Development Convergence or Divergence Analysis on SAARC Nations

- Muzffar Hussain Dar*
- Md. Zulquar Nain**

Abstract

We examine the convergence of financial development among SAARC affiliates for the period 1990 to 2020. The time period is guided by the availability of data and the initiation of policies for financial reform across the affiliates. Unlike the previous studies, a border and comprehensive index is constructed using PCA to measure financial development. We test σ, unconditional and conditional convergence by employing panel techniques. We do not find evidence for the convergence, even after controlling various economic and institutional factors. Economic growth, institutions, trade openness, and government spending are important determinants of the SAARC nations' financial development. The results imply that SAARC affiliates have failed to reap the benefit of a regional alliance. Finally, based on the results, the possible implications are that there is a need to introduce more common-oriented economic policies, so that cross-country dispersion will come down and convergence will take place in the region.

Keywords: Financial Development, Convergence, Determinants, Institutions, Economic Growth
JEL Classification: E44, O16, O53

1. Introduction

In the last few decades, there has been strong advocacy for regional economic integration as a tool for accelerated multidimensional development, and studies have found that, indeed it has not only contributed to economic growth but also helped to establish peace in many regions (Schiff and Winters, 2003; Park et al. 2021). It is believed that economic integration expands the market and production base leading to increased availability of goods and services. In turn, this leads to increased efficiency by reducing the costs of trade (Taghizadeh-Hesary et al., 2020, Park et al., 2021). The SAARC regional block

* Muzffar Hussain Dar is a Senior Research Fellow, Department of Economics, Aligarh Muslim University, Aligarh Uttar Pradesh, India, Email: muzffareco19@gmail.com.**Md. Zulquar Nain is an Assistant Professor, Department of Economics, Aligarh Muslim University, Aligarh Uttar Pradesh, India, Email: alignain@gmail.com. The views expressed in this paper are the authors' own. The authors are grateful to the Editor and Referees for their helpful comments on earlier version of the paper. They also thank Dr. Mushtaq Ahmad Malik for his helpful comments and suggestions.

consisting of eight countries, namely, Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka, was formed in December 1985 with the aim of reaping such benefits of regional economic integration. The SAARC outlined the objectives to accelerate economic growth (henceforth referred to as EG) and enhance the quality of life of their citizen by strengthening cooperation and assistance in the economic, social, cultural, technical and scientific fields. Integration and convergence of financial development (henceforth referred to as FD) in parallel to economic convergence is also touted as a barometer of the outcome of regional economic integration (Casu & Girardone, 2010; Asongu, 2014). In this domain, the present paper examines the convergence of financial development among four major SAARC affiliates, Bangladesh, India, Pakistan, and Sri Lanka.

In the literature, the concept of convergence is primarily associated with EG theories, although financial convergence parallels growth theories. Convergence is a term used in economics to describe the diminishing worldwide disparity of income or output, productivity, economic efficiency, level of FD, and total factor productivity. Convergence is a desirable state of affairs for alleviating poverty and reducing international inequities. There are two noteworthy theoretical aspects regarding convergence. First, convergence is likely to fall victim to its success. It is so that as one moves closer to worldwide equality, "the benefits of backwardness" will diminish (the farther away one is, the faster the convergence pace). It may be challenging for the convergence engine to attain more convergence. It was observed in Economic Cooperation and Development (OECD) countries during the mid-1970s that there was a decline in convergence. Second, convergence may be a painful event for leaders. For convergence to exist, the leaders must develop more slowly than the laggards such that the laggards eventually reach the level of the leaders (Baumol et al., 1994).

Though, from the beginning, both theoretical and empirical works have mostly been focussed on the convergence of EG, in recent decades, some studies have been devoted to examining the aspect of convergence of FD. This could be attributed to the emergence of a stream of literature showing that FD is one of the fundamental factors to accelerate EG (Khan and Senhadji, 2003; Shahbaz et al.,

2013). Furthermore, in recent decades FD also received attention as being one of the factors responsible for the lack of income convergence (Apergis et al., 2012). Against this backdrop, the convergence or divergence of FD among SAARC affiliates may have answers to two important questions. First, is the SAARC as a regional block has been successful? Second, is FD one of the reasons for the lack of income convergence among SAARC affiliates[1]?

The present study extends the limited literature examining the convergence of FD among SAARC nations. Furthermore, the contribution of the present study could be enumerated as follows. First, unlike the previous studies, we have not measured FD ignoring its multidimensional nature. We have used a broad measure by accounting for its three important aspects, which are depth, stability and efficiency. To do so, we used Principal Component Analysis (PCA) to construct an Index for FD (IFD). Second, the present study assesses the convergence of FD among SAARC nations by testing three different types of convergences that are δ-convergence, unconditional or absolute β-convergence, and conditional β-convergence. Furthermore, we also find the determinants of FD. Lastly, for the robustness of the results, we employ an alternate modelling approach.

The rest of the paper is organised as follows. Following the introduction in Section-2, a brief review of the literature is discussed. Section-3 describes the data and methodological framework. Section-4 analyses the empirical results, and the last section concludes the paper.

2. A Brief Review of the Literature

The tests of convergence mainly originate from neoclassical growth models. In neoclassical growth models, convergence is the tendency of a specific country's income to settle into its own steady state under specified conditions. In economic theory, the convergence initiated by Baumol (1986) refers to a negative relationship between the growth rate and the initial level of the variable of

[1] Studies like Zia (2019); Kahn and Daly (2018) among other find lack of income convergence among SAARC affiliates.

interest. Barro and Sala-i-Martin (1991) initiated the concept of "convergence", which refers to a decrease in the cross-sectional variance of the variable of interest with time. Finally, one more convergence was introduced by Galor (1996) which is club convergence, defined as the ability of economies' income per capita to converge to several steady-state equilibria, one for each basin of attraction that depends on beginning conditions.

In the beginning, the work was primarily focused on the convergence of income and not on finance; for example, see (Barro and Sala-i-Martin, 1995; Islam, 1995; Chowdhury, 2004; Ghosh, 2008). Parallel to these mentioned growth theories in literature, there are studies by Bianco et al. (1997); Schmidt et al. (2001); Rajan and Zingales (2003) and others that focus on financial system convergence. In the study carried out by Bianco et al. (1997) on the European Union (EU) since the formation of the European market in the 1990s, they compare the financial accounting data of major economies, financial institutions, families, and non-financial corporations, and in conclusion, they found that there is negligible evidence of convergence among EU members. Again, the study conducted by Schmidt et al. (2001) on the EU claimed that there is an absence of convergence in the EU financial institutions and in the financial companies. Similarly, the study by Kilinc et al. (2017) examines the convergence in financial institutions and market regulations among the European Union members; the results of the study show that the banking and stock market indicators eventually converge across the EU over time, and the process is improved by controlling for the quality of national institutions and a variety of macroeconomic factors. However, the studies of Murinde et al. (2004) support the financial system convergence for seven EU members on a version of the Anglo-Saxon model and introduce the interaction between the real and financial sectors of the group of nations. Like the studies on the EU, the studies by Rajan and Zingales (2003) and Antzoulatos et al. (2011) on developed and developing countries, respectively, on FD convergence did not find any support for convergence. But Fung (2010) examines the test for simultaneous convergence in FD and EG; and argues that there is significant evidence for conditional convergence in developing countries. Again, in a study on 45 developing countries by Bahadir and Valev (2014), the study indicates an underlying process of FD convergence, but it ends when

countries obtain higher levels of FD. But this convergence cannot be claimed due to advances in national institutions or financial institution efficiency. Coming to the Asian context, Dekle and Pundit (2016) found that from 2004 to 2011, the financial systems of weaker countries converged or caught up to those of the benchmark economies. In addition, the GDP per capita, GDP total, and mobile subscriptions raised the FD growth rate; finally, institutional factors such as legal rights and the dominance of government banks in Asia had little influence on the FD convergence. From these studies, there is a mixed result with regard to financial system convergence for regions, unions, and groups of countries. The mixed results may be because the researchers utilize various statistical approaches for different periods and groups of countries, different sets of macroeconomic variables, and different methodologies for measuring variables, particularly FD.

The number of studies on financial convergence mainly focuses on the convergence of the European Union (EU) and developing and developed countries; this may be due to their economic integration and levels of income. With respect to the SAARC nations, to the best of my knowledge, a lot of work has been done on finance and growth for the SAARC members; see the studies Sehrawat and Giri (2016) and Singh and Stakic (2021), but in the literature, there is hardly any study exclusively on FD convergence in the SAARC context. However, one study on financial convergence was carried out by Dekle and Pundit (2016), but this study on 23 ASEAN countries covers the period from 2004 to 2020. So, to fill the gap in the existing literature, this study tries to test the FD convergence among the four major SAARC affiliates from the period 1990 to 2020. Furthermore, from a methodological perspective, in the study of Dekle and Pundit (2016), when the sub-indices and overall index were constructed, it was assumed that each financial indicator was equally important for the measurement of FD, but this is claimed not to be an appropriate method in the construction of an index (Nain and Kamaiah, 2014; Lenka and Bairwa, 2016). Therefore, the present study makes use of principal component analysis for weight generation for the construction of sub-indices and the overall index. Moreover, the present study differs from the earlier studies by testing the three types of convergence

tests and also considering human capital as a determinant of FD. The entire review of literature is summarised in Table-1.

Table 1: Summary of Literature Review

Authors	Sample	Study's Findings
Barro and Sala-i-Martin, (1992)	Panel study on 92 countries.	Findings show that there is convergence in income only if the causal elements of the steady-state income stay constant.
Islam (1995)	Panel study on 96 countries.	There is conditional convergence for per capita real income.
Bianco et al., (1997)	Cross-sectional study group of six European Union countries.	Absence of convergence in FD.
Schmidt et al., (2001)	Cross-sectional study European Union countries.	Absence of convergence in FD.
Rajan and Zingales, (2003)	Panel data study on the groups of high- and low-income countries.	Finds no support for convergence in FD in developed and developing countries.
Antzoulatos et al., (2011)	Panel data study on the groups of high- income and low-income countries.	The results of the study indicate that there is no support for convergence in FD in developed and developing countries.
Murinde et al., (2004)	Panel data study on seven European countries.	They found evidence of financial system convergence for seven European Union members.
Fung (2010)	Panel on high, middle- and low-income countries.	In the test for convergence in FD and EG, he argued that there is significant evidence for conditional convergence.
Bahadir and Valev, (2014)	Panel data based on 45 counties.	They argued that there is an underlying process of FD convergence, but it ends when countries reach higher levels of FD.
Kilinc et al., (2017)	Panel on European Union.	Their study shows that the banking and stock market indicators eventually converge across the European Union over time, and the process is become higher by controlling for the quality of national institutions and various macroeconomic factors.
Dekle and Pundit., 2016	Panel on 23 Asian Countries.	They argued that the financial systems of weaker countries converged or caught up to those of the benchmark economies.

Source: Authors' Preparation

3. Data and Methodological Framework

This section is divided into two sub-sections. The first one includes the data and study variables used in the study, and the second part covers the methodology framework.

3.1 Data

The present study endeavours to examine the convergence of FD among four major SAARC affiliates for the period of 1990 to 2020. The sample of countries is guided by the availability of data. The sample period is primarily guided by two factors. First, the availability of data on the variables used to measure the FD. Second, the initiation of policies for financial reforms. Broadly in the sample countries, financial reforms started in the 1990s (Chowdhury, 2004; Ehalli, 2011). Unlike the previous studies, we have used broad measures of FD incorporating the multidimensional aspects of FD. However, the inclusion of all indicators to capture various aspects of FD in a model separately may create the problem of multicollinearity and degrees of freedom due to overparameterization. Therefore, we used two-stage Principal Component Analysis (PCA), a data reduction technique, to construct an Index for FD. Following Cihak et al. (2012), Nain and Kamaiah (2014), Lenka (2015), and others, we used a two-step PCA approach to construct the index of FD. At first, using PCA, we construct three sub-indices measuring three different aspects of FD, namely depth, efficiency, and stability. In the second step, again using the PCA, we construct a final index for financial development by using the three sub-indices for each country in the sample. The variables selected to include in different sub-indices are guided primarily by Cihak et al. (2012), Nain and Kamaiah (2014), and the availability of data. The description of variables and sources of data are listed in Table-2. In addition, to account for the bias specification of the model, we have included control variables EG (GDP), inflation (INF), foreign trade (TOPN), government spending (GOSPN), and institutions (IDI).

The proponents of the "demand-led hypothesis" argue that EG promotes FD by boosting household and firm borrowing capacity and lowering the possibility

of default rates; that is, a rise in real GDP growth will enhance FD (Levine, 2005; Lenka, 2016; Hussain and Chakraborty, 2012).

On the other hand, high inflation is related to high nominal interest rates and may be considered a sign of bad macroeconomic management, which affects the real profits of banks as banks become less predictable during periods of high inflation, banks may find it more difficult to evaluate the quality of lending during these times (Bahadir and Valev, 2015). In contrast, trade openness is assumed to be positively correlated with FD as it becomes the alternative source of FD for developing countries (Shahbaz et al., 2013; Dekle and Pundit, 2016). The government spending measures the role of government in the economy. Finally, the quality of institutions is the total score provided to a country based on the protection of property rights, government integrity, judicial effectiveness, and different business, employment, investment, and trade freedoms (Sheikh and Mir, 2022) and expected to have a positive effect on the FD. The description of control variables and sources of data are also listed in Table-2.

Table 2: Description of Variables Used in the Study

Set A: List of Variables Used to Measure the FD			
Proxy to Measure	**Indicator Code**	**Description of Variables**	**Sources**
Depth	PCBO	Private credit by deposit money banks and other financial institutions as a (%) of GDP.	World development indicators, a comprehensive database of World Bank (http://www.data.worldbank.org/indicators).
	DCPS	Bank private credit as a (%) of GDP	
	DMAC	Deposit money bank assets to deposit money bank assets and central bank assets as a (%) of GDP	
	DBA	Deposit money bank assets as a (%) of GDP.	
	LLG	Liquid liabilities as a (%) of GDP	
	FSD	Financial system deposits as a (%) of GDP	
	CBA	Central bank assets as a (%) of GDP	
	LIP	Life insurance premium volume as a (%) of GDP	
	NIP	Non-Life insurance premium volume as a (%) of GDP	

Set A: List of Variables Used to Measure the FD			
Proxy to Measure	**Indicator Code**	**Description of Variables**	**Sources**
Efficiency	BINY	Bank non-interest income to total bank income	
	BCI	Bank cost-to-income ratio	
Stability	CGSE	Credit to government and state-owned enterprises as a (%) of GDP	
	BCD	Bank credit to bank deposits in (%)	
	BDG	Bank deposits as a (%) of GDP	
Set B: List of Base Control Variables			
EG	GDP	GDP per capita (Constant at US $ 2015)	World development indicators, a comprehensive database of World Bank (http://www.data.worldbank.org/indicators). World Heritage (https://www.heritage.org/index)
Inflation	INF	Consumer price index annually	
Trade Openness	TOPN	Total of imports and exports (% of GDP)	
Government Spending	GOSPN	Government final consumption expenditure (% of GDP)	
Institutional development index	IDI	IDI is an aggregate of "property rights, government integrity, judicial effectiveness, and different business, employment, investment, and trade freedoms."	

Source: Authors Preparation

3.1.1 Descriptive Statistics

The descriptive statistics of all the selected variables are presented in Table-3. The results reveal that, on average, each variable has a positive value. Second, none of the variables follows a normal distribution, as the Jarque-Bera test indicates.

The descriptive statistics of all the selected variables are presented in Table-3 The results reveal that, on average, each variable has a positive value. Second, none of the variables follows a normal distribution, as the Jarque-Bera test indicates.

Table 3: Descriptive Statistics

	IFD	GOSPN	IDI	INF	TOPN	GDP
Mean	18.532	87.282	53.784	7.664	41.560	1418.253
Median	16.766	88.250	54.650	7.019	37.599	1227.715
Maximum	35.453	161.100	66.000	22.565	88.636	4225.106
Minimum	5.755	66.300	33.600	2.007	15.506	512.097
Std. Dev.	7.400	12.758	6.105	3.834	17.518	877.031
Jarque-Bera	10.311	803.970	54.904	59.196	18.917	92.204

Source: Authors Calculation

3.2 Methodological Framework

3.2.1 Principal Component Analysis

Measuring FD is difficult as the concept of FD is multi-dimensional. Using a single variable may only capture some of the aspects of FD. On the one hand, including all variables separately in the same regression model might create problems of multicollinearity and degrees of freedom. So, to overcome these problems and to provide an appropriate measurement of FD, we employ the Principal Component Analysis (PCA) to measure the FD.

PCA is a statistical technique that uses an orthogonal transformation to change a set of possibly correlated variables into a set of uncorrelated variables known as principal components (hereafter referred to as PCs). The number of PCs is less than or equal to the selected variables in PCA. In the PCA transformation, the first PC accounts for the maximum variance of the original variables, and each succeeding PC accounts for less variance than the preceding PCs. We have used the eigenvalue rule to select the number of PCs for the construction of the FD index. As discussed earlier, we have used a two-step PCA to construct the index of FD, which can be described as follows.

In the first stage, the three sub-indices have been constructed using the following equations:

$$Y_i^d = W_1X_1 + W_2X_2 + W_3X_3 + \cdots + W_nX_N \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 1$$

$$Y_i^e = W_1X_1 + W_2X_2 + W_3X_3 + \cdots + W_nX_N \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 2$$

$$Y_i^s = W_1X_1 + W_2X_2 + W_3X_3 + \cdots + W_nX_N \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

Where the subscript i indicates the country and (Y_i^d, Y_i^e, Y_i^s) denotes the sub-indices depth, efficiency, and stability, $W_i \ \ i = 1,2,\cdots,n$ are the weights of variables derived using PCA and $X_1 \ to \ X_n$ denotes the variables or indicators used in the respective indices.

In the second stage PCA, the final FD index (IFD) is constructed by incorporating the three sub-indices ($Y_i^d, Y_i^e, and \ Y_i^s$) into the final index by employing the same procedure as described in the first stage.

$$IFD_i = W_1Y_i^d + W_2Y_i^e + W_3Y_i^s \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

3.2.2 Convergence

In the seminal work of Solow (1956) there is a continuous flow of both theoretical and empirical studies that examine the convergence in real per capita income. Parallel to income convergence, there is also FD convergence, which has been recently documented in economic literature. The present study follows the methodology of (Chowdhury, 2004; Ghosh, 2008) as mentioned in the sub titles of this section respectively. Furthermore, this study makes use of the FD index as a measure of FD to test convergence as used in the studies by (Dekle and Pundit, 2016; Kilinc et al., 2017). To test the FD convergence, we develop the following models;

3.2.2.1 Sigma (σ)-Convergence

The test of σ−convergence signifies that when the dispersion (usually measured by standard deviation) of FD across the regions or countries declines over time, this process is called σ-convergence. In this study, we are not employing the standard deviation but rather the coefficient of variation, as has been used by Ghosh (2008).

The following model needs estimation to check the σ−convergence across the SAARC countries.

$$CV_t = \epsilon_0 + \rho_1 t + \epsilon_{2t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where, CV_t, is the coefficient of variation of the variable (such as FD) among the four SAARC affiliates at a given time period t, (t=1,2…t).

The expected sign of ρ_1 would test the σ-convergence hypothesis as follows,

(a) If $\rho_1 < 0$; it means the presence of σ-convergence, i.e. decrease in (CV_t) of the variable.

(b) If $\rho_1 > 0$; it means the absence of σ-convergence, i.e., an increase in (CV_t) of the variable.

3.2.2.2 Absolute/ Unconditional Beta β-Convergence

To test the β-convergence of FD, the following regression models illustrate that the average growth rate of FD is assumed to be dependent on its initial level of FD:

Thus, testing for the absolute β-convergence of FD involves estimating the following regression model.

$$G_{I,t,t-\tau}=[(F_{i,t})-(F_{I,t-\tau})]/\tau=\alpha+\beta(F_{i,t-\tau})+\varepsilon_{i,t} \quad \text{.....6}$$

Where, $G_{I,t,t-\tau} = [(F_{i,t}) - (F_{I,t-\tau})]/\tau$ is the i^{th} country's average growth rate of the variable between the periods t and $t - \tau$, respectively. The (τ) is the duration of the time or the total number of years over which convergence has to be observed.

By equation 6, the statistically significant signs of the coefficients of the initial level $F_{I,t-\tau}$ Suggests that:

(a) If $\beta < 0$, it means the presence of β-convergence, i.e., there is catching up.

(b) If $\beta \geq 0$, this indicates the non-β-convergence absence of catching up.

3.2.2.3 Conditional Beta (β) Convergence

Conditional β-convergence (βc) may be examined using to count the differences in the economies in terms of introducing a set of control variables, such as mobile cellular subscriptions; GDP per capita; total trade; inflation, foreign direct investment, and the rule of law. The studies of the model's control variables, which are the main determinants of FD, are employed in the studies (Bahadir and Valev, 2015; Dekle and Pundit, 2016). The above equation 6 estimates unconditional convergence because it does not account for any country's specific characteristics. Based on equation 6, we add a vector of control variables and employ the fixed effects on the following regression model.

$$G_{I,t,t-\tau}=[(F_{i,t})-(F_{I,t-\tau})]/\tau=\alpha_i+\beta(F_{I,t-\tau})+\sum_{j=1}^{k}\theta j\left(X_{i,t-\tau}^{j}\right)+\varepsilon_{i,t}\ldots\ldots..7$$

Referring to equation 7, a significant sign of β indicates:

(a) If $\beta < 0$ β, indicates that the convergence holds conditionally.

(b) If $\beta \geq 0$ β*;* it indicates that the convergence does not hold conditionally.

4. Empirical Results

4.1 Construction of Index of FD

The PCA results for the IFD of the sample countries are reported in Table 4[2]. From the results, we observe that only the first PC(PC1) has an eigenvalue greater than one. Further, this component explains more than 60.4% variation of the total variation of the sub-indices. Therefore, we select only the first PC to generate the factor scores/weights to construct the IFD. The sub-indices, stability, depth, and efficiency respectively contribute about 37.9%, 38.6%, and 23.73% to the total variation in the selected PC.

[2] For the brevity of space, the results of the sub-indices are not reported.

Next, we examine the convergence of FD among the four SAARC affiliates, and the results are analyzed in the following sections.

Table 4: Principal Component Analysis

	PC1	PC2	PC3	
Eigen value	2.084	0.801	0.114	-
Cumulative value	2.084	2.885	2.999	-
Variance proportion	0.694	0.267	0.038	-
Cumulative proportion	0.694	0.961	1.000	-
Variables/ eigenvectors	Vector 1	Vector 2	Vector 3	Factor scores /loadings
Stability	0.642	0.323	0.694	0.379
Depth	0.655	0.336	0.717	0.386
Efficiency	0.396	0.916	0.06	0.233

Source: Authors' calculation

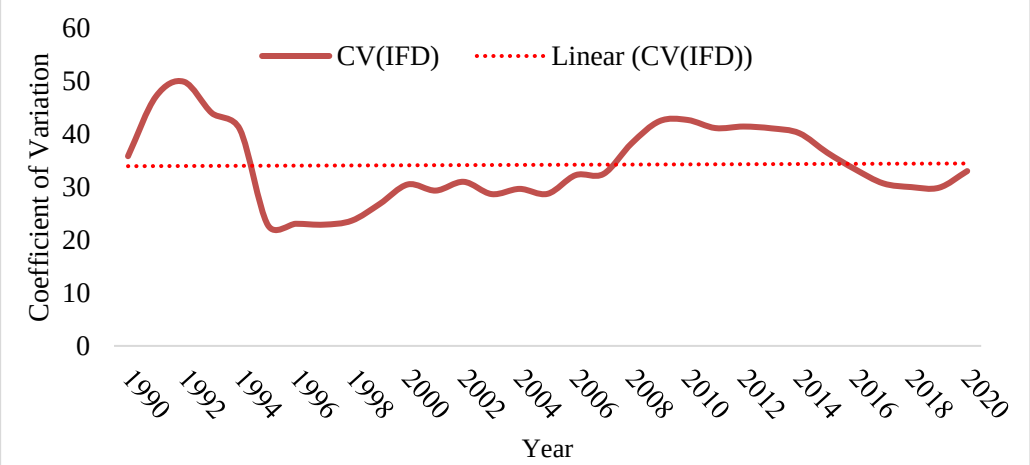
4.2 Convergences

Using the methodology suggested by Barro (1992), and Sala-i-Martin (1996), we examine three different versions of convergence.

4.2.1 σ- Convergence

The easiest method to test for σ-convergence is to estimate the time trend of some measure of the dispersion of FD across nations. We have computed each year's Coefficient of Variation (CV) of FD across the four SAARC nations. The estimated CV of FD is plotted against time in Figure-1. The figure exhibits a static trend. However, from the figure, we cannot draw a specific conclusion. Therefore, we use other alternate method by estimating equation 5 to examine the presence or absence of $\sigma - convergence$.

Figure 1:Trend in Coefficient of Variation of IFD



The results are reported in Table-5. The coefficient (ρ_1) is positive and shows rejection of null hypothesis that is we may conclude that there is absence of convergence of FD among the four SAARC nations. However, the coefficient is statistically insignificant. These findings indicate that four SAARC nations have insignificant σ- divergence in FD during the whole period.

Table 5: Estimates of σ-Convergence

Dependent Variable	**Coefficient of Variation of IFD**	
Variables	statistics	p-value
Intercept	34.172	0.441
ρ_1	0.002	0.984
R^2	0.475	
No observations	31	

Source: Authors' Calculation

4.2.2 Absolute/ Unconditional Beta (β)-Convergence

The test for the absolute β-convergence hypothesis is carried out by estimating equation 6 using the Ordinary Least-squares (OLS) method. The dependent variable in Equation-6 is the annual average growth rate of IFD. The

absolute β-convergence test is conducted by regressing the annual average growth rate of FD on its initial level.

The results are reported in Table-6. The results exhibit that the coefficient of the initial level of economic development is statistically insignificant. We may infer that there is no absolute β-convergence or divergence throughout this period. Therefore, the absolute β-Convergence hypotheses are rejected in the case of four SAARC nations. This indicates that since 1991 the structural economic reforms of SAARC nations have had no significant impact on reducing the disparities in FD.

Table 6: Estimates of β Convergence

Dependent Variable	$G_{I,t,t-\tau}$	
Variables	statistics	p-value
Intercept	5.647	0.244
β	-0.213	0.495
R^2	0.597	
No observations	04	

Source: Authors' calculation

4.3 Conditional Beta(β)-Convergence

The conditional β-convergence could explain the observed disparity in FD across the four SAARC nations. The conditional β-convergence can be examined by estimating Equation-7, which includes the initial level of FD and other variables as regressors. The regressors could explain disparities in steady-state FD across the nations. We employ a panel data approach to Equation-7, where the dependent variable is the lag difference of IFD. The Hausman test reveals that the fixed effect is more appropriate than the random effect and pooled regression model.

The results based on the fixed effect estimator are presented in Table-7. Table-7 displays a statistically insignificant positive coefficient on the lagged dependent variable FD. This shows that there is statistically insignificant conditional divergence in four SAARC nations. Moreover, the results also reveal the factors affecting the growth of FD.

The estimated coefficient of the Institutional Development Index (IDI), a proxy for the quality of institutions) is 0.144 and is statistically significant at 1%, showing a positive effect of institutions on the growth of FD. The positive relationship between institutions and FD may be attributed to the fact that a strong institutional setup controls corruption by enhancing the legal protection of creditors' rights and implementing sound policies and regulations to promote the financial sector. The result is in agreement with the previous studies by North (1990), Rajan and Zingales, (2003), Ayadi et al. (2013), among others. Similarly, EG, proxied by GDP per capita, also has a statistically significant positive effect on the FD. The positive effect, in fact, supports the "demand-led hypothesis." That is, an increase in real income leads to more demand for financial services (see, among others, Levine, 2005; Puatwoe and Piabuo, 2017; Ehalli et al., 2021).

Table 7: Conditional β-Convergence

Dependent Variable	**(**IDF**):**$[(F_t) - (F_{t-1})]$	
Independent Variables	Coefficients	P-Values
CONSTANT	-5.236	10.007
IDF (t-1)	0.579	0.579
IDI	0.144***	0.004
GDP	0.003***	0.000
TOPN	-0.067***	0.009
INF	-0.016	0.677
GOSPN	-0.027**	0.026
Number of Observations (N)		123
Hausman Specification Test		75
R2		0.56
Fisher Specification Test		26

Source (s): Authors' Calculation
Note: ***, **, * denotes the level of significance at 1%, 5%, and 10%, respectively.

The coefficient of trade openness is negative and statistically significant, showing a negative effect of trade openness on FD. This could be possible because increased trade volume may be associated with higher risks, exposure to external competition, and external shocks, which will hinder the levels of FD in developing countries like SAARC and these findings are consistent with the

earlier studies of (Svaleryd and Vlachos, 2005; Shahbaz et al., 2013). However, we find a positive but insignificant effect of inflation on FD. Further, from the results, we observe a negative and significant effect of government expenditure on FD. It indicates that an increase in government spending leads to a decrease in FD. This could be possible as an increase in government expenditure supported by unpayable debt or taxation can increase prices and interest rates in the short term and reduce national savings, which in turn leads to a decrease in FD (Nguyen & Trinh, 2018).

However, there may be econometric problems associated with estimation through fixed effects and random effects. The plausible problems in cross-country regression may include omitted variable bias, and the most common endogeneity problem will occur because of the causal link between the variables here, namely FD and EG. In order to get rid of these problems, the present study uses the 2SLS method for the robustness estimations.

4.4 Robustness Check

In the previous section, we may have the problem of endogeneity as there might be a causal link between variables, specifically between FD and EG[3]. Therefore, as robustness, we used an alternate modelling approach. We used Two-Stage Least Squares (2SLS) instrumental variable to account for the problem of endogeneity. The results are reported in the Table-7A in Appendix. We employed the Durbin (1954) and Wu-Hausman (Wu, 1974; Hausman, 1978) tests for endogeneity and the minimum eigenvalue rule and the Sargan (1958) tests for over-identifying restriction. The results reveal that EG is endogenous, the use of the instrument is not overidentified, and the instrument is not weak. Further, the results indicate that the conclusion of the study remains the same that is there is FD divergence among the four SAARC nations. However, the sign and the statistical significance of the few control variables have changed. Though, in literature, similar findings have been reported.

[3] We thank the anonymous referee for pointing out this particular issue.

5. Summary and Conclusion

We examine the convergence of FD among four major SAARC affiliates for the period 1990-2020. Unlike the previous studies, we use a broader and comprehensive measure of FD. For this, an index-IFD is constructed using PCA encompassing three important aspects namely depth, efficiency and stability. We use examine three types of convergence that is σ, unconditional β and conditional β convergence. Further, we also account the problem of endogeneity and estimate an alternate model.

The results reveal lack of evidence of convergence of FD. It is significant to note that, even we control the different aspects of economies, there is no evidence of convergence. Moreover, we find that quality of institutions, EG and government expenditure has positive and significant effect on the FD growth. On the other hand, trade openness has significant and negative effect on the convergence. However, inflation has insignificant effect on the convergence of FD. From the analysis, it can be inferred that SAARC as a regional association has failed to reap the benefits of economic integration. Further, we may infer that FD might be one of the factors for the lack of income convergence. In general, our results are consistent with the view that SAARC as an association has failed to achieve their objectives. Often argued that lack of quality of institutions reflected by the low score of IDI and instability may be the reason for such outcome. It is also believed that dissimilar characteristics and presence of regional agreements such as SAPTA and SAFTA, SAARC may not be able to achieve the benefits of regional economic integration (Zia, 2019). Finally, based on the results, the possible implications are that there is a need to introduce more common-oriented economic policies, increase economic growth, and promote institutional and trade development so that cross-country dispersion will come down and convergence will take place in the region. However, this study is not without limitations. The major limitations of the study include the fact that this study is restricted only to four SAARC members; this may be due to the unavailability of data for the rest of the members. Furthermore, this study is also restricted to financial development convergence. However, it could be more imperative to analyse the simultaneous convergence of economic growth and financial development.

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Apendix

Table 7A: Conditional β-Convergence

	Dependent Variable: (IDF):$[(F_t) - (F_{t-1})]$	
Independent variables	Coefficients	P-Values
CONSTANT	0.757	0.771
IFD (t-1)	0.979***	0.000
IID	0.138***	0.002
GDP	0.006***	0.009
TOPN	-0.067***	0.699
INF	-0.177***	0.000
GOSPN	-0.054***	0.000
R^2	0.93	
Tests of endogeneity		
Ho: Variables are exogenous		
Durbin (score)	$\chi^2(1)$ = 34.952	p-value = 0.00
Wu-Hausman	F(1, 10) = 45.652	p-value = 0.00
Test of instruments		
Ho: Instruments are weak		
Minimum Eigenvalue statistic = 226.835		
2SLS Size of nominal 5% Wald test = (16.38)		
Test of overidentifying restrictions		
Ho: Instruments are valid		
Sargan (score)	$\chi^2(1)$ = 0.492	p-value = 0.410

Source (s): Authors' Preparation
Note: ***, **, * Signifies that coefficient are significant at 1%, 5%, and 10% respectively

Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 97-113)

Bankruptcy Classification of Islamic Banks in Bangladesh: Application of Emerging Market Z-Score

- Mohammad Saiful Islam*
- Mohammad Ziaul Islam**
- Md. Foysal Hasan***

Abstract

The paper aims to classify the full-fledged Islamic banks in Bangladesh applying Emerging Market (EM) Z-score model of bankruptcy prediction. Financial data to calculate EM-Z scores have been collected from the nine years' (2011-2019) financial statements of seven full-fledged Islamic banks which are listed in Dhaka Stock Exchange. The methodology of the study is based on the ratios calculated from financial statements of the banks, the coefficients and the intercept which are the components of EM Z-score model developed by Altman (2002). EM Z-scores have been calculated for the nine years (2011-2019) to measure bankruptcy probability of listed Islamic banks in Bangladesh. The results of the analysis demonstrate that listed full-fledged Islamic banks in Bangladesh are in financially sound and healthy condition except ICB Islamic Bank Limited. Moreover, the application of the model supports the validity of the model as it has successfully identified the problematic Islamic bank in Bangladesh namely ICB Islamic Bank Limited. The findings of the paper can be used by the Islamic banks as early alert procedure of adjustment in risk mitigating strategy through improvement in dragging down ratios of EM-Z score. Besides, as central bank of Bangladesh and the investors do not have any such internationally recognized model in Bangladesh to apply on Islamic banks for bankruptcy prediction, the model can be effective diagnostic tool for them. As the Islamic banking industry in Bangladesh is small in size, it can challenge the maximum outcome of the study.

Keywords: EM Z-score, Altman, ICBIBL, Bankruptcy Prediction
JEL Classification: G21, G33

1. Introduction

Islamic banking concept established during 1970s which was familiarized globally during 2000 (Zaabi, 2011). In Bangladesh, Islamic bank was established in 1983 with Islami Bank Bangladesh Limited. Islamic banks in Bangladesh operate with lower cost of fund and higher profitability compared to conventional banks due to confidence of

*Mohammad Saiful Islam is a Lecturer (Banking), Leading University, Sylhet, Email: saif_kazal@yahoo.com**Mohammad Ziaul Islam is a student of Master of Business Administration (MBA), Leading University, Sylhet, Email: mzijamil@gmail.com***Md. Foysal Hasan, is an Assistant Professor, Bangladesh Institute of Bank Management (BIBM), Dhaka, Email: foysal@bibm.org.bd. The views expressed in this paper are the authors' own.

80 percent Muslim population and advantage of 90 percent loan to deposit ratio (Hasan, 2020). Islamic banking industry is still emerging market in a number of countries including Bangladesh, Muslim-majority nation.

Islamic banking industry in Bangladesh holds distinct characteristics of emerging market. Islamic banks are facing minimal competition within Islamic banking industry as only 11 full-fledged Islamic banks (TBS Report, 2020) and 15 conventional banks with Islamic banking branches out of total 61 banks in the country (Bangladesh Bank, 2019) are currently in operation in this industry under the supervision of central bank of Bangladesh namely Bangladesh Bank. The 8th full-fledged Islamic bank, Union Bank Limited, was established in 2013. After almost 8 years, in 2021, three conventional banks have been converted into full-fledged Islamic bank namely Global Islami Bank Limited, Standard Bank Limited and Jamuna Bank Limited (Hasan, 2020). Total number of Islamic banking branch is around 1,380 running with total manpower of around 35,906 (Bangladesh Bank, 2019). Islamic banking industry has high growth potential. Currently, the industry holds almost 25 percent of total deposits and 25 percent of total credits of whole banking industry in Bangladesh (Bangladesh Bank, 2019). Total deposits and total investments of Islamic banking industry are BDT 280,228 crore and BDT 262,752 crore, respectively (Bangladesh Bank, 2019). In spite of COVID-19, Islami Bank Bangladesh Limited recorded BDT 01 trillion deposits in 2020, first time in commercial banking history of Bangladesh (Khan, 2021). Islamic banking industry has been found bullish and competitive during this pandemic (Khan, 2021). The industry holds high risk profile due to absence of Islamic financial instruments and hedging, high liquidity risk and risk of deregulation. Islamic banks maintain 11 percent statutory liquidity ratio with 90 percent investment to deposit ratio where conventional banks maintain 18.5 percent statutory liquidity ratio with 85 percent loan to deposit ratio (Uddin, 2020).

Islamic banking in Bangladesh is going through a number of controversies since long. It has been argued by Professor Alamgir that Islami Bank Bangladesh Limited followed Shariah incurring loss during the inception of the bank and Islamic banks in Bangladesh that follow cost-plus profit lending making flexible Shariah rules are deceiving clients instead of risk-sharing of assets (Islam, 2017). He recommended forming independent and central Shariah supervisory council under central bank for proper auditing and monitoring of Islamic banks' operation although Islamic banks have their own Shariah boards with lack of expertise (Islam, 2017). Former Professor Yasin Ali observed similarity of profit rate of Islamic banks with interest rate of

conventional banks in Bangladesh and opined that provisional profit rate is fixed by Islamic banks before deposit mobilization and investment which they change rarely during year ending (Uddin, 2020). According to the opinion of former deputy governor of central bank, Khondker Ibrahim Khaled, conventional banks are becoming Islamic banks recently to avoid the regulatory embargo of interest rate bounds of 9 percent for lending and 6 percent for deposits complied by conventional banks but not Islamic banks due to Shariah norms (Uddin, 2020). In Bangladesh, the industry is still operating without adequate act or law or Shariah governance guideline of Islamic banking and under minimum supervision of central bank. The industry does not have adequate Islamic banking infrastructure, legal basis and Islamic capital market (Hasan, 2020). Even, adequate diagnostic tools are not available to assess financial performance of Islamic Banks. Central bank mainly depends on only CAMELS rating to measure the health of Islamic banks but it is also important to classify the banks according to bankruptcy prediction to ensure discipline in banking sector. It is urgent need to apply diagnostic models in this industry so that Islamic bank's performance can be assessed by several stakeholders specially bank itself, central bank, investors and depositors.

However, a number of academic studies have been conducted on the financial performance of Islamic banks but papers on application of EM Z-score model are rare to predict bankruptcy of Islamic banks especially in emerging market. One recent study of Majumder and Moonmoon (2020) predicts the level of bankruptcy risk of major Islamic banks but the study took into consideration data of only six years. Another study of Saha and Navila (2018) applies Z-score model on private commercial banks in Bangladesh rather than emerging Islamic banking industry. Hence, our paper aims to apply emerging market Z-score model on Islamic banking industry in Bangladesh to measure bankruptcy likelihood of Islamic banks covering seven major Islamic banks and data of nine years. As Islamic banking industry in Bangladesh is still emerging industry, EM Z-score is essential to apply in this sector specially by regulators for bankruptcy prediction. The paper will add knowledge to previous research in Islamic banking industry and inform stakeholders such as policymakers, investors, banks, and individuals about the health of the Islamic banks in Bangladesh.

The paper has been organized with following sections. Section-2 contains literature review, Section-3 provides research methodology, Section-4 contains analysis and findings, and Section-5 concludes the paper.

2. Literature Review

The Islamic Finance Country Index (IFCI) 2019 ranking reveals that Bangladesh has made notable strides in the area of Islamic banking, ascending from the 10th to the 8th position. This progression is attributed to the adoption of emerging technologies and the proliferation of agent banking networks by Islamic banks in the country (Khan, 2021). Furthermore, the escalating demand for Islamic financial instruments has prompted the Bangladeshi government to issue the Bangladesh Government Islamic Investment Sukuk worth BDT 40 billion through the inaugural auction at the end of 2020, while the succeeding auction has introduced a 40-50 percent quota for Islamic banks (FE Report, 2021). The recent formulation of sukuk rules by the Bangladesh Securities and Exchange Commission is also expected to promote the Islamic capital market (Gulf Times, 2020).

In stark contrast to the interest-based banking system, the Islamic banking system has engendered economic and social justice in Bangladesh, ameliorating issues of economic recession and discrimination (Ibrahim et al., 2014). However, Islamic banks are required to adhere to Islamic Shariah norms in matters such as cost of capital, markup financing, profit margin, and distribution of Zakat to sustain proper Islamic financial practice (Sarker et al., 2017). To augment their performance, Islamic banks should consider capitalizing on profitable sectors, curtailing operational expenditures, and improving return on deposits (Nobi and Billah, 2020).

Notwithstanding the aforementioned advancements, the CAMELS rating components indicate that the management quality and assets quality of Islamic banks in Bangladesh are inferior to those of conventional banks. Conversely, Islamic banks exhibit superior standing than conventional banks in terms of capital adequacy and liquidity management (Uddin et al., 2017). This notwithstanding, the major impediments confronting Islamic banking in Bangladesh comprise the dearth of an Islamic Banking Act and legal framework, meagre diversification of services, and lack of skilled workforce capable of handling Islamic banking and financial innovations (Khan, 2021). Furthermore, Islamic banks are under compulsion to offer competitive profit rates to depositors relative to conventional banks' interest rates to avoid the risk of capital loss and to attract depositors (Ahmed, 2018).

The Z-score model, developed by Edward Altman in 1968, utilizes five financial ratios to predict the distance to default of manufacturing companies. Altman later

modified the model by omitting the fifth ratio (sales/total asset) and making some adjustments, which yielded equally valid predictive results. This modified model, known as the emerging market Z-score model, is more appropriate for non-manufacturing companies (Zaabi, 2011).

The emerging market Z-score model, based on the modified US model, has been successfully applied in emerging market companies outside the US, particularly in Mexico, Brazil, Argentina, and many Southeast Asian countries. Altman has advocated for the testing and development of such models from a country's own data and experience (Altman, 2005).

A study conducted by Abidali and Harris in 1995 revealed that all of the failing companies in their sample had negative EM Z-scores for several years before their ultimate failure. This suggests that the lower the EM Z-score and the longer the company is at risk, the greater the likelihood of its failure. The authors further recommend using the model to rank companies based on their solvency (Abidali and Harris, 1995). Khawaja (2023) examined the effectiveness of the Altman Z-Score model in predicting financial distress among commercial banks in Pakistan and the study showed that the Altman Z-Score model is an effective tool for identifying financial distress among commercial banks in Pakistan. Joshi (2019) analysed that bank had a moderate financial health, with variations across different ratios highlighting the importance of using multiple financial ratios to evaluate the financial health of banks and underscores the relevance of Altman's Z-Score model in this context.

A study indicated that the Altman Z-Score Model was an effective tool for predicting financial distress in Sharia banking in Indonesia (Setiawan, 2019). The study suggested that Sharia banks should maintain a Z-Score value above 2.99 to avoid financial distress and recommended that Sharia banks should use the Altman Z-Score Model as a tool for financial distress analysis to enable effective risk management. Elia et al. (2021) found that the Z-score was an effective tool for predicting financial distress in the Alpha Banks in Lebanon. The study found that two of the Alpha Banks were in a state of financial distress, as indicated by their low Z-scores. The authors recommend that these banks take immediate action to improve their financial health, such as increasing profitability, reducing leverage, or improving their liquidity ratios. The authors' work provides insights into financial distress prediction in emerging markets, and their methodology can be used in other studies of financial health in other sectors.

3. Research Methodology

The methodology of the paper is based on the previous study of Altman (2002) that verified EM Z-score as a robust tool to assess financial performance of a company taking into consideration important financial ratios of bankruptcy prediction.

3.1 Variable Definitions

Variable	Definitions
Working capital to total assets	Working capital divided by total assets. It indicates bank´s ability of managing liquid assets.
Retained earnings to total assets	Retained earnings divided by total assets. It reveals the cumulative profit to recoup the asset of bank.
Return (EBIT) to total assets	Earnings before Interest and Taxes (EBIT) scaled by total assets. It identifies the ability to generate profit from the operation of bank.
Market value of equity or firm's net worth to total liabilities	Market value of equity or net worth scaled by total liabilities. It indicates how value of bank assets can decrease before becoming insolvent.

Source: Majumder and Moonmoon (2020)

3.2 EM Z-score Model

$$\textbf{EM Z-score} = 3.25 + 6.56\,(X1) + 3.26\,(X2) + 6.72\,(X3) + 1.05\,(X4)$$

X1: Working capital to total assets (bank's ability to manage liquidity)

X2: Retained earnings to total assets (cumulative profitability of bank)

X3: Return (EBIT) to total assets (productivity resulted from borrowed fund)

X4: Market value of equity or firm's net worth to total liabilities (likelihood of bankruptcy)

Cut-off Values	Remarks
EM Z- score > 2.6 indicates safe zone	Negligible chance of filing bankruptcy
1.1 < EM Z-score < 2.6 indicates grey zone	Moderate chance of bankruptcy
EM Z-score < 1.1 indicates distress zone	High chance of bankruptcy

Source: Altman, 2002

3.3 Sample Characteristics and Procedure

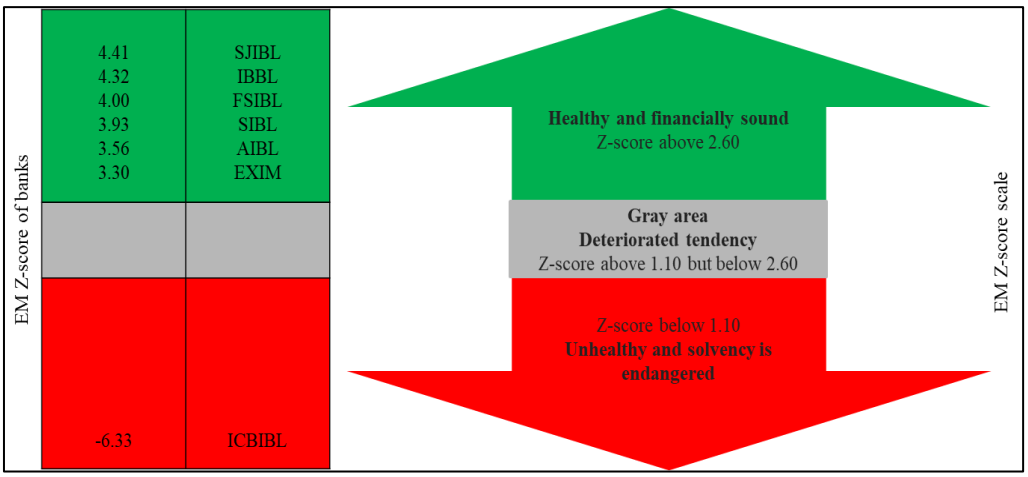
Although 11 full-fledged Islamic banks are currently operating in Bangladesh but the study takes into consideration 7 listed Islamic banks only due to availability of reliable financial data excluding lastly established full-fledged non-listed Islamic bank Union Bank Ltd., established in 2013, and three full-fledged Islamic banks that have

been converted into full-fledged Islamic bank from conventional bank in 2021. Secondary data of all 7 listed Islamic banks have been collected from the financial statements of 9 years (2011-2019) to calculate financial ratios. Based on the financial ratios, EM Z- score of each bank has been calculated for each year. Purposive sampling technique has been applied in this study. The study demonstrates the performance of each Islamic bank in 9 years period through graphical representation of EM Z-scores and financial ratios.

4. Analysis and Findings

4.1 EM Z-score Scales and Islamic Banks' Performance

Figure 01: Result Summery of Islamic Banks' Current EM Z-score



Source: Developed by author calculating EM Z-score from financial statements of Islamic banks (2019)

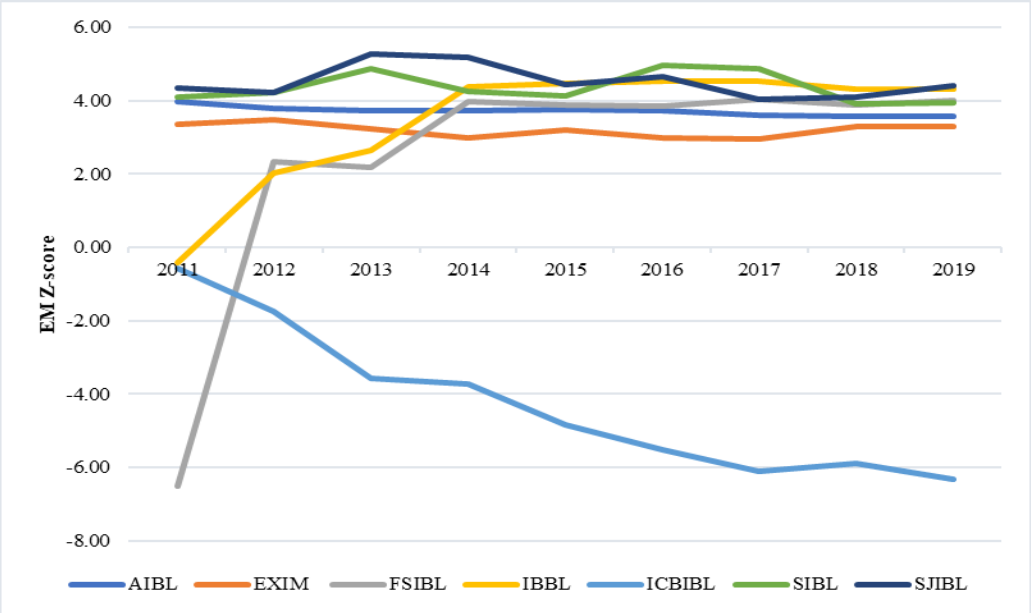
EM Z-score of all the above banks seem healthy and financially sound with scores substantially higher than the cut-off value of 2.60 except ICB Islamic Bank Limited which is in unhealthy condition. Among the financially sound banks, Shahajalal Islami Bank Limited, Islami Bank Bangladesh Limited and First Security Islami Bank Limited are the top three banks with the scores of 4.41, 4.31 and 4.00 respectively. Social Islami Bank Limited, Al-Arafah Islami Bank Limited and EXIM Bank Limited are holding the positions of fourth, fifth and sixth with the scores of 3.93, 3.56 and 3.30 respectively. No bank has been found in the area of grey zone. The above mentioned results align with the recent findings of the study of Majumder and Moonmoon (2020). Compared to the competing CAMELS rating, Islamic banks are financially stronger

than conventional banks and banks with Islamic window in Bangladesh with higher liquidity (Afroj, 2022).

Solvency of ICB Islamic Bank Limited is endangered with substantially lower score of -6.33 which is well below than 1.10. ICB Islamic Bank Limited has been shaped from the ruins of problem bank namely Oriental Bank in 2008 with frozen deposit of BDT 1948 crore to be repaid to the depositors of the predecessor but the bank is still surviving with unpaid deposit of BDT 444.34 crore to pay within November 2021 (Uddin, 2018). Muhammad Shafiq Bin Abdullah, Managing Director of ICB Islamic Bank Limited, opined that the bank could generate profit if it had no inherited frozen deposit (Uddin, 2018).

4.2 Trend Analysis of Islamic Banks' EM Z-scores

Figure 02: EM Z-scores of Islamic Banks in Bangladesh



Source: Developed by author calculating ratios from financial statements of Islamic banks, 2011-2019

EM Z-score of Al-Arafah Islami Bank Limited was 3.96 in 2011 which remained below that level in next eight years with gradual deterioration. The score of EXIM Bank Limited was just 3.35 during 2011 which became slightly lower during next years and became as the beginning score with 3.30 during 2019. Prominently significant progress has been found in the score of First Security Islami Bank Limited. The score

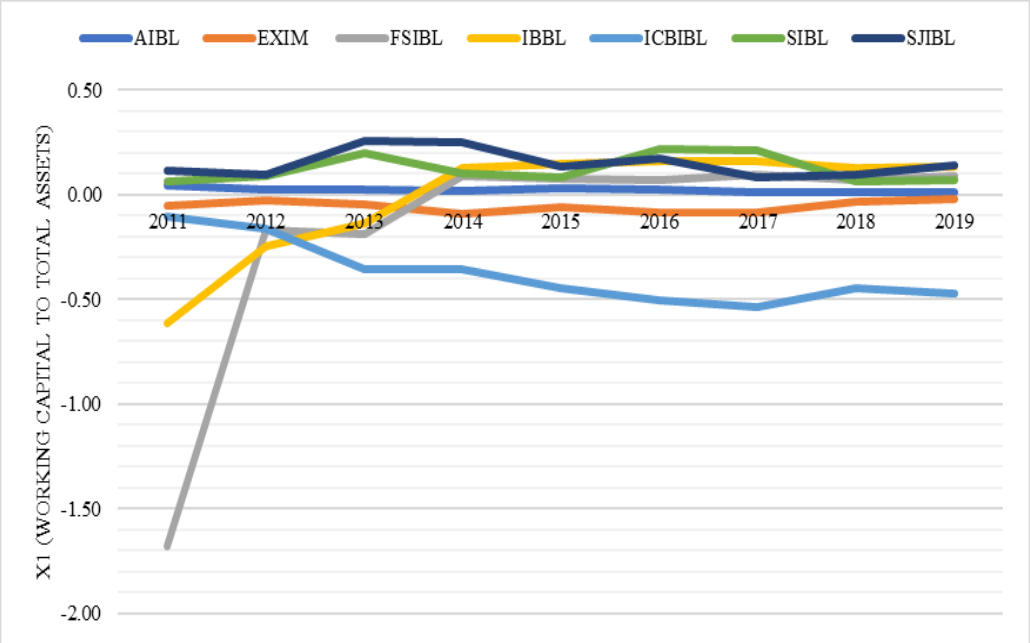
was -6.50 in 2011 under unhealthy zone that became 2.33 in 2012 and remained at 2.17 in 2013 under gray zone. Significant progress has been found in the score of First Security Islami Bank Limited with score of around 4.00 from 2014 to 2019 under healthy and financially sound zone. Islami Bank Bangladesh Limited is the biggest Islamic bank in Bangladesh, which was in unhealthy status in 2011 with score of -0.43 and 2012 with score of 2.01 but improved to healthy condition in 2013 with score of 2.65 and went through further progress till 2019 ending with the score of 4.32. The score of ICB Islamic Bank Limited was always in unhealthy zone from 2011 with -0.58 to 2019 with -6.33 showing gradual deterioration in score as a result of corruption of former officials of the bank who are in jail (Gambe, 2018). EM Z-score of Social Islami Bank Limited was around 4.00 from 2011 to 2019 well above the cut-off value of healthy zone. Score of Shahajalal Islami Bank Limited was above 5.00 in 2013 and 2014 and highest among all Islamic banks in 2019 with the score of 4.41. The Islamic banking Industry seems in healthy and financially sound condition but the only one bank in unhealthy condition can deteriorate confidence of the customers and create reputational risk for other banks.

4.3 Trend Analysis of EM Z-score Ratios

4.3.1. Working Capital to Total Assets Ratio

According to the research of Islami Bank Bangladesh Limited, Islamic banks in Bangladesh use money as medium of exchange which requires higher liquidity and reserve resulting from increased risk generated from demand for depositors' fund and provision for required reserve but the facilities for liquidity management are rare for Islamic banks compared to conventional banks under the existing conventional framework that requires the Islamic banks to depend on central bank to meet the need of cash. Islamic banks cannot maintain adequate reserves holding financial instruments as treasury bills because Islamic securities are rare in Bangladesh. However, Bangladesh Bank has issued Islamic bond titled Sukuk at the end of 2020 which can be a game changer in Islamic banking industry (Uddin, 2020).

Figure 03: Working Capital to Total Assets Ratio of Islamic Banks in Bangladesh



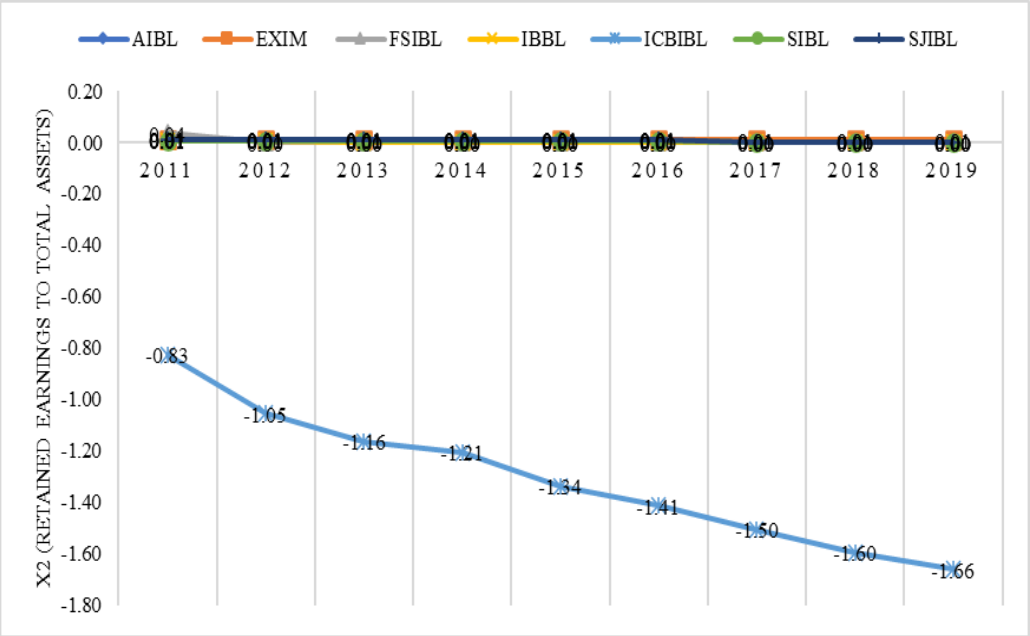
Source: Developed by author calculating ratios from financial statements of Islamic banks, 2011-2019

The industry average of working capital to total assets ratio is -0.05 for the period from 2011 to 2019. Average ratios of Al-Arafah Islami Bank Limited, Social Islami Bank Limited, Shahajalal Islami Bank Limited, and Islami Bank Bangladesh Limited are 0.02, 0.12, 0.15 and -0.02, respectively for nine years which are better than the industry average of -0.05 for the period. On the other hand, nine years average ratios of EXIM Bank Limited, First Security Islami Bank Limited and ICB Islamic Bank Limited are -0.06, -0.17 and -0.38, respectively which are worse than the industry average of the period.

4.3.2 Retained Earnings to Total Assets Ratio

Most of the listed Islamic banks except ICB Islamic Bank Limited regularly pay dividend to the shareholders. Retaining the portion of profit for reinvestment in business seems challenging for Islamic banks under this conventional banking framework where central bank discourages more expansion of Islamic banks due to lack of supervisory capacity and Shariah based legal framework to be followed by Islamic banks.

Figure 04: Retained Earnings to Total Assets Ratio of Islamic Banks in Bangladesh



Source: Developed by author calculating ratios from financial statements of Islamic banks, 2011-2019

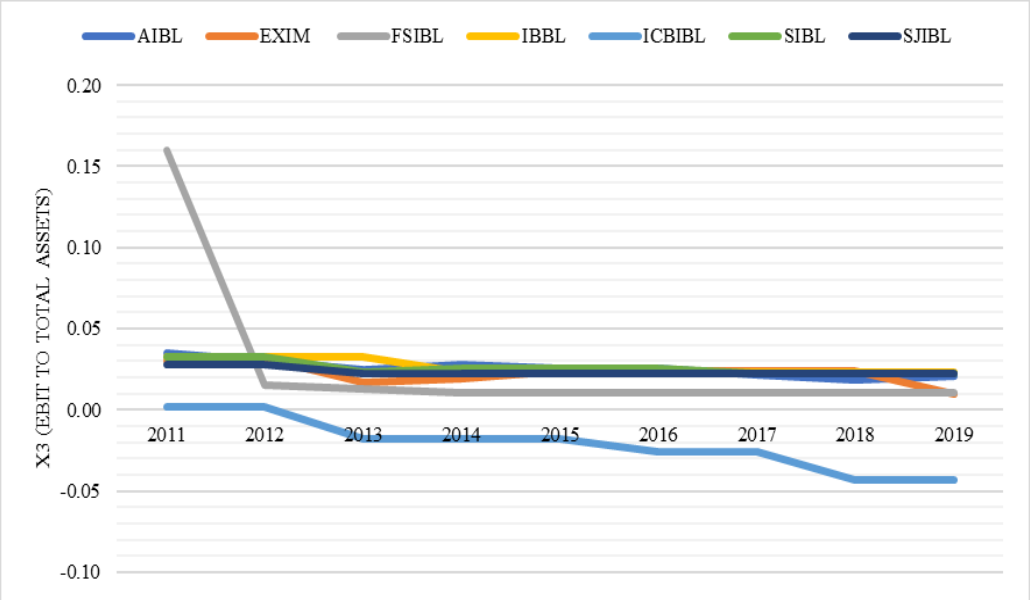
The industry average of retained earnings to total assets ratio is -0.18 for the period from 2011 to 2019. But it seems biased to compare with this industry average due to having abnormally lower level of the ratio of a single bank namely ICB Islamic Bank Limited with ratio of -1.31. Average ratio of Al-Arafah Islami Bank Limited, EXIM Bank Limited, Social Islami Bank Limited, and Shahajalal Islami Bank Limited is 0.01 for nine years. On the other hand, nine years average ratio of First Security Islami Bank Limited and Islami Bank Bangladesh Limited is 0.00.

The situation demonstrates that most of the banks are operating with very lower level of retained earnings compared to total assets. Comparatively all of the banks are in same position in this ratio except ICB Islamic Bank Limited which has negative retained earnings to total assets ratio, and which is not paying any dividend to the shareholders since long.

4.3.3 EBIT to Total Assets Ratio

Still, most of the people do not know how Islamic banks determine profit and share profit with the depositors but they open deposit accounts in these banks based on their religious sentiment. Islamic banks normally generate around 80 percent profit from utilization of fund, around 15 percent profit from investment and negligible profit from fee income.

Figure 05: EBIT to Total Assets Ratio of Islamic Banks in Bangladesh



Source: Developed by author calculating ratios from financial statements of Islamic banks, 2011-2019

The industry average of EBIT to total assets ratio is 0.02 for the period from 2011 to 2019. Average ratio of Al-Arafah Islami Bank Limited, First Security Islami Bank Limited, Islami Bank Bangladesh Limited and Social Islami Bank Limited is 0.03 for nine years which is better than the industry average of 0.02 for the period. On the other hand, nine years' average ratio of EXIM Bank Limited and Shahajalal Islami Bank Limited is 0.02 which is equal to industry average where average ratio of ICB Islamic Bank Limited is -0.02 which is worse than the industry average of the period.

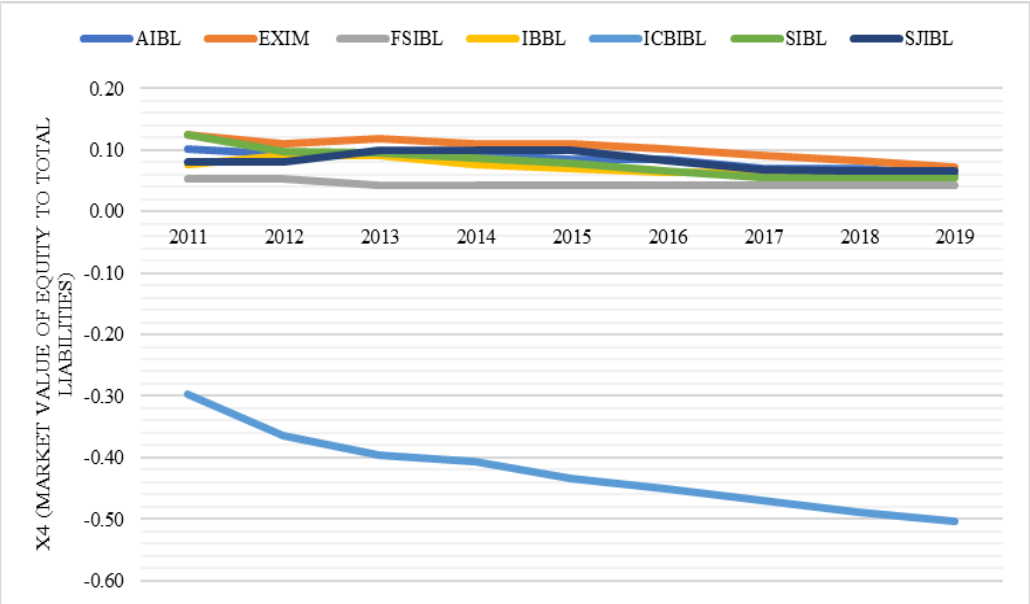
According to the experts' opinion, as much as Islamic banks will follow the Shariah based guidelines of Islamic banking strictly prohibiting the fixation of profit rate earlier of financial year to meet the profit target at the end of the year and offer

lower profit for large customers under this conventional banking system, these banks will have less profit losing depositors which has been evidenced from the earlier stage of the establishment of Islamic Bank Bangladesh Limited.

4.3.4 Net Worth to Total Liabilities Ratio

Capital structure of Islamic banks mainly consists of deposit and equity. In case of both the Islamic banks and conventional banks around 90 percent of bank capital consists of depositor's deposit and around 10 percent of the capital consists of equity. Hence, it seems that the bank is actually doing business based on the funds of depositors with highly leveraged capital structure compared to any other type of business. Surprisingly, the owners of the banks as directors are taking all the major decisions for the banks with only 10 percent capital holdings where the interest of the depositors who are holding 90 percent of capital are neglected avoiding appointment of any depositor director in the board of directors. As Islamic securities are rare in the capital market of Bangladesh, these banks cannot be involved in speculative transactions through investment of depositors' fund aggressively in capital market instruments.

Figure 06: Net Worth to Total Liabilities Ratio of Islamic Banks in Bangladesh



Source: Developed by author calculating ratios from financial statements of Islamic banks, 2011-2019

The industry average of firm's net worth to total liabilities ratio is 0.01 for the period from 2011 to 2019. But it seems biased to compare with this industry average due to having abnormally lower level of the ratio of a single bank namely ICB Islamic Bank Limited with ratio of -0.42. Average ratio of Al-Arafah Islami Bank Limited, Social Islami Bank Limited, and Shahajalal Islami Bank Limited is 0.08 for nine years. On the other hand, nine years average ratio of EXIM Bank Limited is 0.10. Average ratios of Islami Bank Bangladesh Limited and First Security Islami Bank Limited. are 0.07 and 0.04, respectively.

5. Conclusion

The study has applied internationally recognized Emerging Market Z-score model of financial performance analysis and bankruptcy classification in the Islamic banking industry of one of the least developed countries namely Bangladesh to provide valuable information for the stakeholders and add value to academic knowledge. The paper concludes that most of the Islamic banks in Bangladesh are in financially sound and healthy position with significantly higher value of EM Z-score compared to cut-off value of 2.60. But the values are concentrated around 4 since last few years showing stable situation without significant progress. So, banks need to improve in the specific financial performance indicator ratios as determinants of EM Z-score which are dragging down their scores for the progress in the score year by year. Banks need to go through specific ratio as well to observe whether abnormally higher value in any ratio is offsetting the significant lower value of another ratio or not to result better EM Z-score. ICB Islamic Bank Limited has been found as only one bank under this study with unhealthy and insolvent condition. EM Z-score of ICB Islamic Bank Limited shows continuous significant decline below cut-off value of 1.10 throughout the whole period of nine years under this study with negative value in all the ratios as determinant of EM Z-score. So, Bangladesh Bank as a central bank of Bangladesh need to concentrate more for the betterment of the bank and bring discipline in banking industry as this score indicates that central bank failed to improve the condition of the bank in spite of changing its management and significant policy supports.

Working capital to total assets ratio of EXIM Bank Limited is negative throughout the whole period of the study that is dragging down the EM Z-score of the bank and indicating that the bank fails to well manage its liquidity position that may result financial distress of the bank in near future if the management of the bank still does not take the issue seriously. Although First Security Islamic Bank Limited is in healthy

position with better EM Z-score but the bank needs to focus more on profitability as its EBIT to total assets ratio is lowest among all the healthy banks throughout nine years under the study. Net worth to total liability ratio of all the Islamic banks under the study is in declining trend throughout the period of study that is alarming for the industry as banks are becoming more and more leveraged. The ratio has declined to below 0.10 for all banks throughout last four years under the study. First Security Islamic Bank Ltd. is in worst position among all the healthy banks in terms of leverage.

Further research can be conducted on Islamic banks in Bangladesh applying other competing models of bankruptcy prediction as Zmijewski X-Score Model and Grover G-Score Model to make comparison with the findings of our paper.

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Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 114-141)

Performance of Equity Hedge Strategies in India: A Cross-Sectional Analysis

- Mritunjay Mahato, Ph.D.[*]
- A. K. Das Mohapatra, Ph.D.[**]

Abstract

This study's objectives included examining the performance of several Equity Hedge strategies in India as well as the relationships between various strategies and the GHF index. The study's data was compiled from 10 years' worth of data from Eurekahedge and Hedge Fund Research Incorporation. The data were analysed by using Descriptive Statistics, Sharpe ratio, Correlation analysis, Regression analyses and ANOVA. The study shown that out of the eight Equity Hedge strategies such as Equity Market Neutral Strategy, Quantitative Directional Strategy, Sector- Energy/Basic Strategy, Fundamental Growth Strategy, Fundamental Value Strategy, Multi- Strategy, Technology Strategy, and Healthcare Strategy, When compared to the other strategies, the Healthcare Strategy has outperformed them all. It was also discovered that Equity Hedge Strategies and the GHF index had a positive relationship.

Keywords: Equity Hedge, Eurekahedge, Equity Market Neutral, Quantitative Directional, Fundamental Value, Technology, Healthcare Strategy.
JEL Classification:

1. Introduction

Equity Hedge Strategies make use of a significant numeral of hedge funds that are inherently risky. The Equities are traded in many ways like, the spot market, sectoral index indices, market index indices, and futures and options (derivatives). The hedge fund strategies moves around finding opportunities during trading of such type of investments and then placing highly leveraged stocks, as a part of Equity Hedge Strategies.

Primarily, Equity Hedge strategies (EHS) maintain both long and short positions in equity derivative securities. EHS can be broadly classified or hardly focused on specific sectors and ranges like net exposure, leverage employed,

[*]Mritunjay Mahat, Ph.D. is an Assistant Professor, Department of Commerce and Management, Netaji Subhas University, Jamshedpur, Jharkhand, India, Email: mritunjaymahato2012@gmail.com.[**]Professor A. K. Das Mohapatra, Ph.D. is the Vice-Chancellor, Odisha State Open University, Sambalpur, Odisha, India, Email: akdm@suniv.ac.in. The views expressed in this paper are the authors' own.

holding period of funds, duration of market capitalizations, and valuation ranges of typical portfolios. Equity Hedge accredited managers would typically maintain their funds in short- and long-term duration for investing equity. Long-term positions in equities that are expected to gain in value are taken by equity hedge strategies, whereas short-term positions in stocks that are predicted to decrease are taken by short-term hedging strategies. Equity Hedge Strategies look for minimize market disclosure while trying to gain from stock profits in the long-time position, from price declines in the short-term positions. Equity hedge funds concentrate on securities selection in order to maximise absolute returns while minimising market risk exposures by balancing long and short positions. Short selling, as opposed to a long-only portfolio, decreases market correlation, gives additional leverage, and allows the manager to profit from both overvalued and undervalued stocks. Derivatives can be used for both hedging and speculation.

Strategies used by equity hedge funds exploit a variety of global opportunities from the perspective of their distinct categories for accredited investors. The wealthy investors' uses diverse investment strategies include Equity Market Neutral (EMS), Quantitative Directional (QDS), Sector- Energy Basic (SES), Growth (GS), Value (VS), Technology (TS), and Healthcare Strategy (HS). The majority of equity hedging strategies use single name shorts for portfolio to find out risk and return and enhanced absolute return, however others may use index-based hedges to lower market risk.

2. Review of Literature

The authors of the report, Banerjee and Chowdary, called it "Performance of Hedge Funds in India" (2018). The objective of the study was to compare the performance of Indian hedge funds to those of hedge funds in other countries, including those in Europe, the United States, Asia-Pacific, and the GHF index. According to the study, Indian hedge funds produce larger returns at higher risk (measured by the standard deviation of the respective returns) with higher drawdowns (Banerjee & Chowdary, 2018).

Shin et al. (2018) in their research on 'Hedge Funds: Risk and Performance'. The goal was to look at how models of hedge funds' disclosure to risk factors and their performance over time. The study reveals that (i) the optimal models with fewer factors exhibit greater explanatory power than ABS models, and (ii) the Combinations of risk factors that explain most of the variance in performance of each hedge fund portfolio based on investment strategy (Shin, Smolarski, & Soydemir, 2018).

Buchanan, Lauren. (2011) have conducted on the study on 'The Success of Long-Short Equity Strategies versus Traditional Equity Strategies & Market Returns'. The study's goal was to evaluate the effectiveness of long-short stock trading strategies from January 1990 to December 2010. The study concluded with the finding that if long-short equities managers were able to effectively determine which companies were overvalued, undervalued and dynamically rebalance their strategies, completely hedged and net long strategies can produce higher risk-adjusted alpha (Buchanan, 2011). Boasson & Boasson (2011) have conducted of the entitled 'Risk and returns of hedge funds investment strategies'. The important aim of the study was to find out the risk and return performance of hedge fund investment strategies. The study revels with the finding that twelve (12) hedge fund investment strategies appear to make on average positive and statistically significant alphas which measure abnormal returns in excess of what would be budgeted by an equilibrium model such as the Capital assets pricing model (CAPM) and a multi-factor asset-pricing model (Boasson & Boasson, 2011).

'The Risk in Hedge Fund Strategies: Theory and Evidence from Long/Short Equity Hedge Funds', according to Fung and Hsieh (2011). The study's goal was to look at how long / short equity Hedge Fund strategies generate returns from on track as well as enlarge stock market wagers. Non-factor linked returns or alpha are favourably concurrent on market activity and negatively concurrent on aggregate short interest, according to the study. (Fung & Hsieh, 2011).

A study on "The Performance of Hedge Funds and Mutual Funds in Emerging Markets" was done by Eling and Faust in 2010. The study's goal was

compare to the presentation of standard mutual funds with hedge funds in emerging markets. This study concluded with the findings that a number of hedge funds generate significant optimistic alpha, whereas for the most part of mutual funds do not perform better than traditional benchmarks (Eling & Faust, 2010).

Gregoriou and Duffy (2006) have conducted on the study on 'Hedge Funds: A Summary of Literature'. The purpose of the study was to conclude many hedge fund studies associated to their institutional, chronological and recital characteristics. The study concluded with the finding that a stable portfolio of hedge funds can make available better long-standing returns with lesser volatility than one without hedge funds (Gregoriou & Duffy, Hedge Funds: A summary of Literature, 2006).

Adel A. Al-Sharkas (2005) has conducted a study on 'The Return in Hedge-Fund Strategies'. The aim of research was to look at the difference between traditional and absolute return of hedge funds. The study over and done with the major finding that definitions of their return objectives: hedge funds aim for absolute returns by balancing investment opportunities and risk of financial loss (Al- Sharkas, 2005).

A study on "Hedge fund performance rating using data envelopment analyses" was done by Gregoriou et al. in 2005. Through data envelopment analysis, the study's goal was to assess the performance of the classification DEA. The study's finding that DEA be used as a complimentary method for the selection of competent hedge funds and funds of hedge funds for investors. Using DEA can shed light on hedge fund and further to validate hedge fund manager assortment with other techniques (Gregoriou, Sedzro, & Zhu, Hedge Fund Performance appraisal using Data envelopment Analysis, 2005).

Bares et al. (2004) examined the subsistence of relative performance perseverance among person hedge funds on a increasing return basis in their paper, "Performance in the Hedge Fund Industry: An Analysis of Short- and Long-Term Persistence." The study concluded with the finding based on their

typical past returns, the Relative Value and Specialist Credit strategies have the highest percentage of outperforming managers (Bares, Gibson, & Gyger, 2004).

The authors of a paper titled "Analysis of hedge fund performance" were Capocci and Hübner in 2004. The study's goal was to examine the recital of hedge funds using asset-pricing models, namely Carhart's (1997) model in conjunction with the models from Fama & French (1998) and Agarwal & Naik (2000). The study came to the conclusion that there is restricted proof of performance persistence but not for extreme performers when looking at the performance of hedge funds for various personality strategies and different sub-periods, including the Asian Crisis period. (Capocci & Hubner, 2004).

In 2004, Connor and Woo published a research titled "An Introduction to Hedge Funds." The study's objective was to look at a general introduction to the hedge fund sector and the vocabulary employed there. The study's findings indicated that the trading and valuation procedures used by hedge funds were inherently volatile. (Connor & Woo, 2004).

The study 'Multi-Period Performance Persistence Analysis of Hedge Funds' was conducted by Agarwal and Naik (2000). Using quarterly, half-yearly, and yearly returns, the study's goal was to see if persistence is affected by the duration of return measurement intervals. The study concluded that the multi-periods structure was much less than the standard two-period structure, and that there was no perseverance in the annual return point in the multi-periods framework (Agarwal & Naik, 2000).

A study titled "The Performance of Hedge Funds: Risk, Return, and Incentives" was carried out by Ackermann et al. in 1999.The aim of the study was to explore the quite a few interesting features that may influence the performance, together with: flexible investment HFS, well-built managerial level motivations, considerable managerial investment, complicated investors, and inadequate government failure to notice as regards hedge funds. The study ended with the finding that hedge funds consistently do better than mutual funds, but not benchmark market index and positive & negative survival related

unfairness's offset each other hedge funds (Ackermann, McEnally, & Ravenscraft, 1999).

Kahn and Rudd (1995) have conducted a study on 'Does historical performance predict future performance?' The intent of the study was to exploration of the perseverance of mutual fund performance which indicates that various investors need more than earlier period performance facts to pick future winners. The study concluded with the finding that persistence only for fixed-income fund performance and persistence rim cannot overcome the average under performance of fixed-income hedge funds ensuing from fees and expenses (Kahn & Rudd, 1995).

A study on systematic risk and expected return of event- driven strategies in India was undertaken by Mahato and Mohapatra (2020). In comparison to the Standard & Poor (S &P) BSE 500, the study's goal was to look at the relationship between systematic risk and projected return of Event Driven HFS. The study's findings show that (i) Special Situation Strategies have a high relationship between organized risk and usual return, and (ii) Event Driven HFS and Standard & Poor's (S & P) BSE 500 have a positive correlation. (Mahato & Das Mohapatra, A Study on Systemetic Risk and Expected Return of Event Driven Strategies in India, 2020).

3. Research Gap

According to the aforementioned analysis of the literature, very little research was conducted in India and the majority of studies pertaining to hedge funds were conducted outside. Due to the small amount of wealthy investors who are accredited investors present in India, it has also been noted that these investors are unaware of the numerous hedge fund operating in India's methods. Some rich individuals avoid investing in hedge funds because of the high management fee structure for certified participants.

From the above literature also found that the Investment techniques used by hedge funds seem to provide, on average, positive and statistically significant alphas, which measure abnormal returns above what an equilibrium model would budget for, by this the accredited investors won't fulfil their objectives

and Additionally, it was discovered from the review of literature that mutual funds generate higher returns than hedge funds.

4. Objectives

The two primary objectives of this study are to evaluate the performance of equity hedging strategies in India and to compare the returns of different equity hedge strategies to the GHF index.

5. Research Methodology

The study's critical information was gathered from secondary sources, particularly from the Eurekahedge and Hedge Fund Research Inc. In the view of India, eight Equity Hedge Strategies (EHS) selected at arbitrary out of a variety of Equity Hedge Strategies. They are Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES). These eight (8) techniques were chosen for their ease of use. The data was gathered in a strategy-by-strategy manner over a ten-year period, from January 2008 to December 2017. Eight different Equity Hedge Strategies (EHS) are used as variables in this study. To examine the association between the return of EHS and the GHF index, this study used descriptive statistics, Sharpe ratio, and correlation analysis, regression analysis, and ANOVA. Eight Equity Hedge Strategies (EHS), including Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES), are independent variables in the study. The Global Hedge Fund Index (GHF index) is the dependent variable in the regression analysis. To determine their relationship, correlation analysis was utilised to compare the individual average returns of equity hedge strategies to the average returns of the Global Hedge Fund Index (GHF index).

6. Analysis and Interpretation

In this article, the effectiveness of each stock hedge strategy has been individually analysed. The results are shown in Table-1.1.

Table 1.1: Descriptive Statistics of the Returns on Equity Hedge Strategies

Equity Hedge Strategies	Minimum	Maximum	Mean	σ	Skewness	Kurtosis
EMS	-2.87	1.85	0.164	0.786	-1.462	3.962
QDS	-9.14	4.89	0.243	2.236	-1.227	3.001
SES	-17.09	10.08	-0.127	4.197	-0.920	2.714
FGS	-13.19	9.77	0.235	3.304	-0.850	2.705
FVS	-9.64	6.61	0.391	2.632	-0.845	1.884
MUS	-8.02	5.02	0.289	2.205	-0.732	1.494
TES	-7.12	4.92	0.461	2.290	-0.743	1.145
HES	-9.81	6.58	0.817	2.672	-0.978	1.830

Note: EMS=Equity Market Neutral Strategy, QDS= Quantitative Directional Strategy, SES=Sector-Energy/ Basic Strategy, FGS= Fundamental Growth Strategy, FVS= Fundamental Value Strategy, MUS= Multi- Strategy, TES= Technology Strategy, and HES= Healthcare Strategy.

It is found from Table 1.1 that Healthcare Strategy (HES) has evidence the maximum return with a mean value of 0.817 among all the eight sub strategies of Equity Hedge Strategy. This is followed by Technology Strategy (TES), Fundamental Value Strategy (FVS), Multi-Strategy (MUS), Quantitative Directional Strategy (QDS), Fundamental Growth Strategy (FGS), Equity Market Neutral Strategy (EMS), and Sector- Energy/Basic Strategy (SES) with the mean values of 0.461,0.391, 0.289, 0.243, 0.235, 0.164, and -0.127, respectively.

Additionally, Sector-Energy/Basic Strategy (SES), with a standard deviation of 4.19, is the strategy that carries the largest risk. Of all the strategies in the category, this one turns out to be the most volatile. Additionally, it was discovered that all of the techniques had negative skewness. An increased likelihood of experiencing extremely poor returns is indicated by a negative skewness.

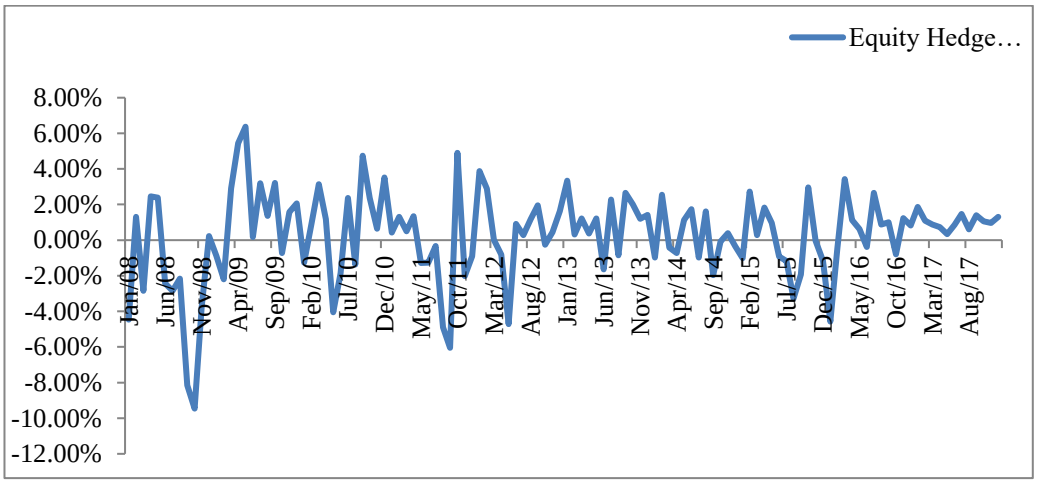
To assess the consistency of the profits, the kurtosis values of the returns from the various techniques have been computed. In contrast to a platykurtic distribution, which would indicate that the returns have "outliers," or are not

stable, a mesokurtic distribution would indicate that the earnings are more steady and consistent. In case of Equity Hedge strategy, as Table 1.1 shows, Equity Market Neutral Strategy (EMS) and Quantitative Directional Strategy (QDS) have kurtosis value ranging from 3.001 and 3.962. Therefore, it may be concluded that the return of Equity Market Neutral Strategy (EMS) and Quantitative Directional Strategy (QDS) have been 'mesokurtic', hence they give a stable return. But, the kurtosis values of all other strategies in the category, such as Sector- Energy/Basic Strategy (SES),Fundamental Growth Strategy (FGS),Fundamental Value Strategy (FVS),Multi-Strategy (MUS),Technology Strategy (TES) and Healthcare Strategy (HES), have remained in between 1.145 and 2.714, which are all below 3.00. They are therefore 'platykurtic', having 'outliers', and hence their returns are not consistent.

In addition, for ease of comprehension, a graphical representation of the performance of Equity Hedge Strategies for the 10-year period under review has been completed. The graphs show the overall performance as well as the performance of individual funds. The overall performance is depicted in Fig. 1.1, while the performance of the Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi-Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES) is depicted in Fig. 1(a) through 1(h). The X-axis and Y-axis, respectively, reflect the time period and the'return' of Equity Hedge Strategies.

Figure-1.1 shows that over the course of the study's 10 years, the overall return of the equity hedge strategy has fluctuated between a maximum of 6.37% and a minimum of minus (-)9.46%.

Figure 1.1: Overall Return of Equity Hedge Strategies



The returns have ranged from 1.85% to minus (-) 2.87% for the Equity Market Neutral Strategy (EMS), as shown in Figure-1.1(a); 4.89% to minus (-) 9.14% for the Quantitative Directional Strategy (QDS); 10.08% to minus (-) 17.09% for the Sector- Energy/Basic Strategy (SES), as shown in Figure-1.1(c); and 9.77% to minus (-) 17.09% for the (-) Figure-1.1(d) shows the Fundamental Growth Strategy (FGS) at 13.19%; Figure-1.1(e) shows the Fundamental Value Strategy (FVS) at 6.61% to minus (-) 9.64%; Figure-1.1(f) shows the Fundamental Growth Strategy (FGS) at 5.02% to minus (-) 6.58% to minus (-) 9.81% in the case of Healthcare Strategy (HES)as depicted in Fig. 1.1(h).; 8.02% in the case of Multi-Strategy (MUS); 4.92% to minus (-)7.12% in the case of Technology Strategy (TES); and 6.58% to minus (-)9.81% in the case of Multi-Strategy.

Fig.1.1(a) Return of Equity Market Neutral Strategy

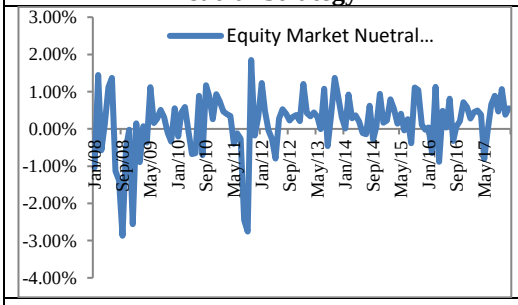


Fig.1.1 (b) Return of Quantitative Directional Strategy

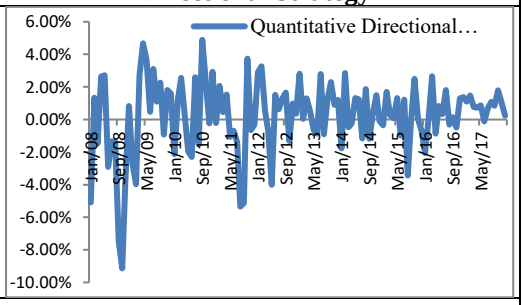


Fig. 1.1(c): Return of Sector- Energy/ Basic Strategy

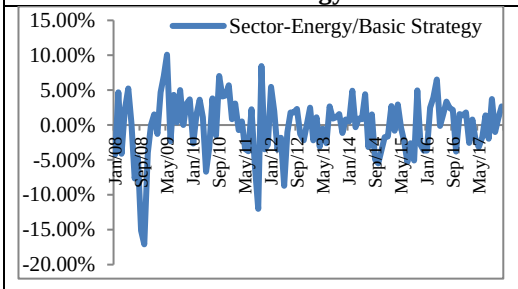


Fig.1.1 (d) Return of Fundamental Growth Strategy

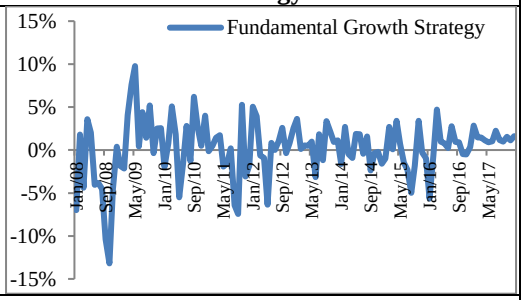


Fig.1.1(e): Return of Fundamental Value Strategy

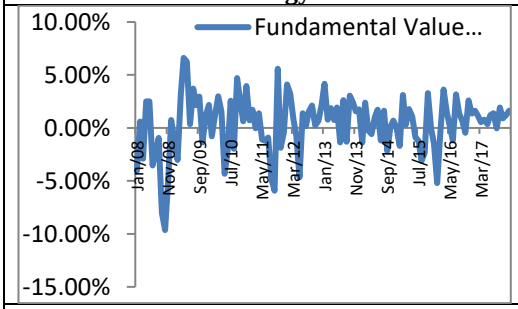


Fig. 1.1(f): Return of Multi- Strategy

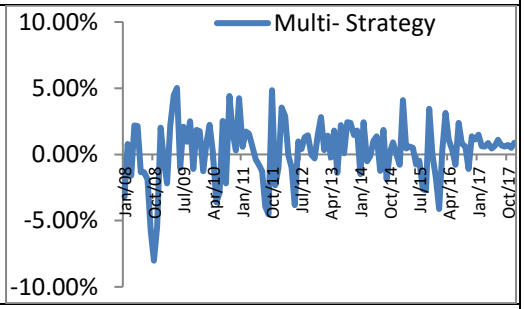


Fig.1.1(g): Return of Technology Strategy

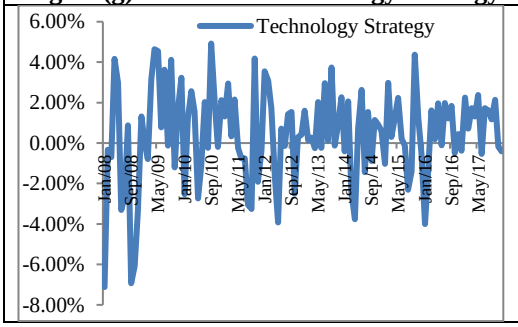
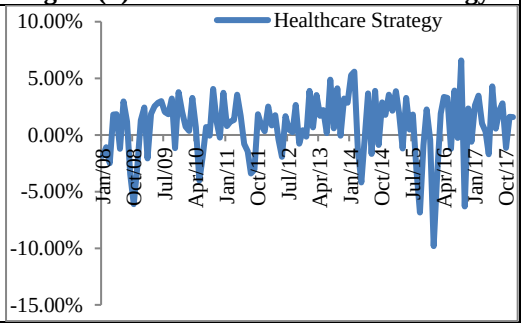


Fig.1.1(h): Return of Healthcare Strategy



7. Risk and Return of Equity Hedge Strategies

The Risk and Return of Equity Hedge Strategies (EHS) have been analyzed at this point and the results shown in Table-1.2. There are eight (8) Equity Hedge Strategies, namely, Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS) , Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES), against which the analysis have been made here.

Table 1.2: Sharpe Ratio of the Returns on Equity Hedge Strategies

Equity Hedge Strategies	Return	Risk Free Return	σ	Sharpe Ratio
EMNS	0.020	0.028	0.036	-0.219
QDS	0.032	0.028	0.110	0.040
SES	-0.003	0.028	0.222	-0.141
FGS	0.041	0.028	0.200	0.066
FVS	0.054	0.028	0.148	0.176
MS	0.038	0.028	0.107	0.091
TS	0.060	0.028	0.121	0.266
HS	0.105	0.028	0.128	0.597

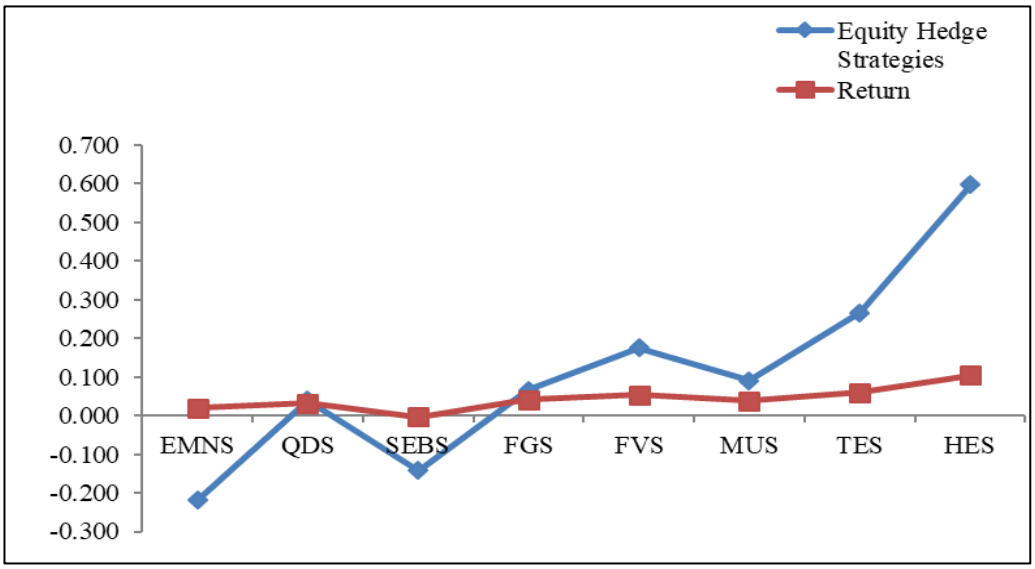
Note: EMS=Equity Market Neutral Strategy, QDS= Quantitative Directional Strategy, SES=Sector-Energy/ Basic Strategy, FGS= Fundamental Growth Strategy, FVS= Fundamental Value Strategy, MUS= Multi- Strategy, TES= Technology Strategy, and HES= Healthcare Strategy.

Table-1.2 shows that the Sharpe ratio of the Healthcare Strategy (HES) is the highest among other Equity Hedge Strategies, with a Sharpe value of 0.597. This means that Healthcare Strategy (HES) provides the highest annual return per unit of risk during a 10-year period, from January 2008 to December 2017. Technology Strategy (TES), Fundamental Value Strategy (FVS), Multi-Strategy (MUS), Fundamental Growth Strategy (FGS), Quantitative Directional Strategy (QDS), Sector-Energy/Basic Strategy (SES), and Equity Market Neutral Strategy (EMS), with values of 0.266, 0.176, 0.091, 0.082, 0.066, 0.040, -0.141, and -0.219, respectively, are followed by Healthcare Strategy (HES). The Sharpe ratio in Healthcare Strategy (HES) has been discovered to provide greater value per unit of return, implying that accredited investors should prefer to invest in Healthcare Strategy (HES). Furthermore, as compared to other Equity Hedge Strategies, the Sector-Energy Basic Strategy (SES) is more

variable and riskier. However, investors will not be able to obtain the highest possible return per unit. This means that a strategy that is more variable and risky does not meet the expected return per unit of risk. Investors should change their approach from Sector-Energy Basic Strategy (SES) to alternative Equity Hedge Strategies if they do not expect this to continue in the future.

The risk and return of Equity Hedge Strategies have also been graphically depicted for easy understanding. Risk and return graphs for several Equity Hedge Strategies have been developed. Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi-Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES) are all shown in Figure-1.2.

Figure 1.2: Sharpe Ratio of Equity Hedge Strategies



Note: EMS=Equity Market Neutral Strategy, QDS= Quantitative Directional Strategy, SES=Sector-Energy/ Basic Strategy, FGS= Fundamental Growth Strategy, FVS= Fundamental Value Strategy, MUS= Multi- Strategy, TES= Technology Strategy, and HES= Healthcare Strategy.

Figure-1.2 depicts the returns of different Equity Hedge Strategies over the 10 years duration from January 2008 to December 2017 under study. The X-axis represents various Equity Hedge Strategies and the Y-axis represents the

Sharpe ratio and Return of different Equity Hedge Strategies, namely, Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES). Figure-1.2 also depicts that the Quantitative Directional Strategy (QDS), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES) gives positive risk and return, whereas Equity Market Neutral Strategy (EMS) and Sector- Energy/Basic Strategy (SES) gives negative risk and return.

8. Interrelationship between EHS and GHF Index

The GHF index must be used to investigate the interrelationships between Equity Hedge Strategies. By using correlation analysis, the association between Equity Hedge Strategies and the GHF index has been designed based on total observations of yearly average return for ten (10) years. Table-1.3 displays the findings of the correlation analysis.

Table 1.3: Correlation between Equity Hedge Strategies & GHF Index

Strategies	**EMNS**	**QDS**	**SES**	**FGS**	**FVS**	**MUS**	**TES**	**HES**	**GHF Index**
EMNS	1								
QDS	0.873	1							
SES	0.538	0.845	1						
FGS	0.761	0.976	0.901	1					
FVS	0.807	0.981	0.872	0.977	1				
MUS	0.834	0.978	0.848	0.964	0.996	1			
TES	0.782	0.919	0.753	0.923	0.930	0.946	1		
HES	0.715	0.791	0.567	0.763	0.807	0.839	0.933	1	
GHF Index	**0.671**	**0.927**	**0.899**	**0.980**	**0.929**	**0.909**	**0.872**	**0.693**	**1**

Note: EMS=Equity Market Neutral Strategy, QDS= Quantitative Directional Strategy, SES=Sector-Energy/ Basic Strategy, FGS= Fundamental Growth Strategy, FVS= Fundamental Value Strategy, MUS= Multi- Strategy, TES= Technology Strategy, HES= Healthcare Strategy and GHF index= Global Hedge Fund index.

The diversity amongst the various Equity Hedge Strategies is substantial, ranging from 0.980 to 0.671, as seen in Table-1.3. With four (4) out of eight (8) equity hedge strategies having a very high positive correlation, the GHF index

has a extremely high positive relationship. With a significance value of 0.980, the GHF index and Fundamental Growth Strategy (FGS) have a very strong positive association. Fundamental Value Strategy (FVS), Quantitative Directional Strategy (QDS), Multi-Strategy (MUS), Sector- Energy/Basic Strategy (SES), Technology Strategy (TES), Healthcare Strategy (HES), and Equity Market Neutral Strategy (EMS) are the following strategies, with values of 0.929, 0.927, 0.909, 0.899, 0.879, 0.693, and 0.671, respectively. The positive coefficient correlation value has been related with the GHF index. This indicates that the securities are moving in the same direction. This means that the Equity Hedge Strategies and the GHF index are linked.

As a result, it's possible to conclude that Equity Hedge Strategies and the GHF index have a very high degree of positive association. Fundamental Growth Strategy (FGS) is the most influential sub strategy on the GHF index, followed by Fundamental Value Strategy (FVS), Quantitative Directional Strategy (QDS), Multi-Strategy (MUS), Sector- Energy/Basic Strategy (SES), Technology Strategy (TES), Healthcare Strategy (HES), and Equity Market Neutral Strategy (EMS). As a result, accredited equity hedge fund investors must initially concentrate on the 'Fundamental Growth Strategy (FGS)'. Following a period of intense focus on the return of Fundamental Growth Strategy (FGS), equity hedge fund investors will shift their focus to Fundamental Value Strategy (FVS). Furthermore, equity hedge fund investors decided on Quantitative Directional Strategy (QDS), Multi-Strategy (MUS), Sector- Energy/Basic Strategy (SES), Technology Strategy (TES), Healthcare Strategy (HES), and Equity Market Neutral Strategy (EMS).

In addition, the hypothesis was developed to investigate the relationship between the returns of various Equity Hedge Strategies and the GHF index. Therefore, the hypothesis, which is expressed as "*There is no significance difference between the return of Equity Hedge Strategies and the return of GHF index*,".

> *$H_0$1: There is no significant difference between return of Equity Hedge Strategies and the return of GHF index*

The goal of developing the hypothesis was to learn more about how equity hedge strategies affected the return of the GHF index. The result was calculated in terms of returns, namely the effect equity hedging strategy returns had on the return of the GHF index. No, provided that the GHF index return is unaffected by the return on equity hedge strategies, that the hypothesis *$H_0$1: There is no significant difference between the return on Equity Hedge Strategies and the return on the GHF index* has been tested using the ANOVA and F-test, as shown in Table-1.4. (i).

Table 1.4(i): ANOVA of the Effect of Equity Hedge Strategies on GHF Index

	Sum of Squares	**df**	$\overline{\mathbf{X^2}}$	**F-test**	**P-value**
Regression	14.056	8	1.757	20.088	0.000
Residual	0.087	1	0.087		
Total	14.143	9			

Table-1.4(i) shows that the *p* value, or significance value, is 0.000, which is less than 0.05 at the 5% significance level. These results indicate that the returns on Equity Hedge Strategies and the returns on the GHF index have a significant link. Furthermore, when performing a regression analysis to determine the level of interrelationship between the returns on the Equity Hedge Strategy and the returns on the GHF index, the R value 0.897, which stands for the level of prediction of the dependent variable, is 0.894, as shown in Table-1.4(ii). The R value of 0.897 is considered a very good interpreter value. The Equity Hedge Strategies have also set the Adjusted R^2 value to be 84.4 percent variation in the GHF index.(Mahato & Das, 2020) As a result, 84.4 percent of the eight (8) identified Equity Hedge Strategies, such as Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES)., have a significant effect.

Table 1.4(ii): Equity Hedge Strategies and the Return of the GHF Index: Regression Analysis

R	**R^2**	**Adj. R^2**	**Std. Error of the Estimate**	**Change Statistics**					**DW Statistics**
				R^2	**F**	**df1**	**df2**	**Sig. F**	
0.897	0.894	0.844	0.29574	0.894	20.088	8	1	0.171	1.538

The validity of *H_01: There is no significant difference between the return on Equity Hedge Strategies and the return on the GHF index* has been experienced by using ANOVA and Regression analysis, by measure up to the return of GHF index with the individual Equity Hedge Strategies. As known before, eight (8) Equity Hedge Strategies have been considered here. They are Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi- Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES). As a result, the following eight (8) sub-hypotheses of the main hypothesis H_01 have been proposed:

H_01 (EMS): Return of Equity Market Neutral Strategy of Equity Hedge has no significant relationship on the return of GHF index.

H_01 (QDS): Return of Quantitative Directional Strategy of Equity Hedge has no impact on the return of GHF index.

H_01 (SES): Return of Sector- Energy/Basic Strategy of Equity Hedge has no significant relationship on the return of GHF index.

H_01 (FGS): Return of Fundamental Growth Strategy of Equity Hedge has no significant relationship on the return of GHF index.

H_01 (FVS): Return of Fundamental Value Strategy of Equity Hedge of Equity Hedge has no significant relationship on the return of GHF index

H_01 (MUS): The return of the Multi-Strategy Equity Hedge Index shows no correlation with the return of the GHF index.

H_01 (TES): The return of the Equity Hedge Technology Strategy has no correlation with the return of the GHF index.

H_01 (HES): The return of the Equity Hedge Healthcare Strategy has no correlation with the return of the GHF index.

Each of the sub-hypotheses has been tested one by one in the following order:

$H_0$1 (EMS): Return of Equity Market Neutral Strategy of Equity Hedge has no significant relationship on the return of GHF index.

The first sub-hypothesis was used to investigate the impact of an Equity Market Neutral Strategy on the GHF index's return. The influence was calculated in terms of returns, i.e. the impact of the return on GHF index from the Equity Market Neutral Strategy. Now, presumptuous that the return on Equity Market Neutral Strategy have no consequence on the return on GHF index that the first sub hypothesis *$H_0$1 (EMS): Return of Equity Market Neutral Strategy of Equity Hedge has no significant relationship on the return of GHF index*, ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Table-1.5(i) and Table-1.5(ii).

Table 1.5(i): ANOVA of the Consequence of Equity Market Neutral Strategy on GHF Index

	Sum of Squares	**df**	$\overline{\mathbf{X^2}}$	**F-test**	**p-value**
Regression	6.373	1	6.373	6.561	0.034
Residual	7.771	8	0.971		
Total	14.143	9			

According to Table-1.5 (i), the significant value or p value is 0.034, which is less than 0.05 at the 5% significance level (i). This indicates a strong correlation between the return on the Equity Market Neutral Strategy and the performance on the GHF index. Furthermore, the result displayed in Table-1.5(ii) of a regression analysis to ascertain the degree of interaction between the return on the equity market neutral strategy and the return on the GHF index reveals that Adjusted R^2 is 0.382, which indicates that the return on the GHF index has a 38.2 percent impact on the return on the equity market neutral strategy. Therefore, the hypothesis *$H_0$1 (EMS): Return of Equity Market Neutral Strategy of Equity Hedge has no significant relationship on the return of GHF index* rejected.

Table 1.5(ii): Equity Market Neutral Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.671	0.451	0.382	0.98556	0.451	6.561	1	8	0.034	2.134

H_01 (QDS): Return of Quantitative Directional Strategy of Equity Hedge has no impact on the return of GHF index.

The influence of Quantitative Directional Strategy on the return of the GHF index has been investigated in the second sub-hypothesis. The effect was calculated in terms of returns, i.e. the impact of the return on GHF index from the Quantitative Directional Strategy. Now, presumptuous that the return on Quantitative Directional Strategy has no consequence on the return on GHF index that the second sub hypothesis *H_01 (QDS): Return of Quantitative Directional Strategy of Equity Hedge has no impact on the return of GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.6(i) and 1.6(ii).

Table 1.6(i): ANOVA of the Consequence of Quantitative Directional Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	12.167	1	12.167	49.247	0.000
Residual	1.976	8	0.247		
Total	14.143	9			

At the 5% significance level, the significant value or p value is 0.000, which is less than 0.05., as shown in Table-1.6(i). This means that the return on Quantitative Directional Strategy and the return on the GHF index have a significant link. Furthermore, when a regression analysis is performed to determine the level of association stuck between the return on Quantitative Directional Strategy and the return on GHF index, the result shown in Table-6(ii) shows that Adjusted R^2 is 0.843, implying that the return on Quantitative Directional Strategy is influenced by the return on GHF index to the extent of 84.3 percent.

Therefore, the hypothesis *H_01 (QDS): Return of Quantitative Directional Strategy of Equity Hedge has no impact on the return of GHF index* rejected.

Table 1.6(ii): Quantitative Directional Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.927	0.860	0.843	0.49705	0.860	49.247	1	8	0.000	1.685

H_01 (SES): Return of Sector- Energy/ Basic Strategy of Equity Hedge has no significant relationship on the return of GHF index.

The effect of Sector- Energy/Basic Strategy on the return of the GHF index has been investigated in the third sub- hypothesis. The effect was calculated in conditions of returns, i.e. the impact of the return on Sector- Energy/Basic Strategy on the GHF index return. Now, presumptuous that the return on Sector- Energy/Basic Strategy has no consequence on the return on GHF index that the 3rd sub hypothesis *H_01 (SES): Return of Sector- Energy/Basic Strategy of Equity Hedge has no significant relationship on the return of GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.7(i) and 1.7(ii).

Table 1.7(i): ANOVA of the Consequence of Sector- Energy/Basic Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	11.437	1	11.437	33.803	0.000
Residual	2.707	8	0.338		
Total	14.143	9			

The significant value or *p* value is 0.000, which is a smaller value than 0.05 at the 5% significance level, as shown in Table-1.7(i). This means that the return on the Sector- Energy/Basic Strategy and the return on the GHF index have a substantial link. Furthermore, when a regression analysis is performed to determine the level of association stuck between the return on Sector- Energy/Basic Strategy and the return on GHF index, the result shown in Table-1.7(ii) shows that Adjusted R^2 is 0.785, implying that the return on Sector- Energy/Basic Strategy is influenced by the return on GHF index to the extent of

78.5 percent. Therefore, the hypothesis *$H_0$1 (SES): Return of Sector-Energy/Basic Strategy of Equity Hedge has no significant relationship on the return of GHF index* rejected.

Table 1.7(ii): Interrelationship between the Return of Sector- Energy/ Basic Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.899	0.809	0.785	0.58166	0.809	33.803	1	8	0.000	2.782

$H_0$1 (FGS): Return of Fundamental Growth Strategy of Equity Hedge has no significant relationship on the return of GHF index.

The fourth sub- hypothesis looked into the impact of Fundamental Growth Strategy on the GHF index's return. The impacts have been quantified in conditions of returns, i.e. the impact of the Fundamental Growth Strategy on the GHF index's return. Now, presumptuous that return on Fundamental Growth Strategy have no consequence on the return on GHF index that fourth sub hypothesis *$H_0$1 (FGS): Return of Fundamental Growth Strategy of Equity Hedge has no significant relationship on the return of GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.8(i) and 1.8(ii).

Table 1.8(i): ANOVA of the Consequence of Fundamental Growth Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	13.588	1	13.588	195.713	0.000
Residual	0.555	8	0.069		
Total	14.143	9			

Table-1.8(i) shows that the *p* value or significance value is 0.000, which is a smaller amount than 0.05 at the 5% significance level. This means the return on the Fundamental Growth Strategy and the return on the GHF index have a considerable link. Furthermore, when a regression analysis is performed to determine the degree of association stuck between the return on Fundamental Growth Strategy and return on GHF index, the result shown in Table-1.8(ii) shows that Adjusted R^2 is 0.956, implying that the return on Fundamental

Growth Strategy is influenced by the return on GHF index to the tune of 95.6 percent. Therefore, the hypothesis *H_01 (FGS): Return of Fundamental Growth Strategy of Equity Hedge has no significant relationship on the return of GHF index* rejected.

Table 1.8(ii): Fundamental Growth Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.980	0.961	0.956	0.26349	0.961	195.713	1	8	0.000	1.962

H_01 (FVS): Return of Fundamental Value Strategy of Equity Hedge of Equity Hedge has no significant relationship on the return of GHF index

The influence of Fundamental Value Strategy on the return of the GHF index has been investigated using the 5th sub-theory. The impacts have been quantified in conditions of returns, such as; the impact of the Fundamental Value Strategy on the GHF index's return. Now, presumptuous that return on Fundamental Value Strategy has no consequence on the return on GHF index that the fifth sub hypothesis *H_01 (FVS): Return of Fundamental Value Strategy of Equity Hedge of Equity Hedge has no significant relationship on the return of GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.9 (i) and 1.9 (ii).

Tab. 1.9(i): ANOVA of the Effect of Fundamental Value Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	12.216	1	12.216	50.713	0.000
Residual	1.927	8	0.241		
Total	14.143	9			

Table-1.9(i) shows that the p value or significance value is 0.000, which is a smaller amount than 0.05 at the 5% significance level. This means the return on the Fundamental Value Strategy and the return on the GHF index have a significant link. Furthermore, when a regression analysis is performed to determine the level of association stuck between the return on Fundamental Value Strategy and return on GHF index, the result shown in Table-1.9(ii) shows that Adjusted R^2 is 0.847, implying that the return on Fundamental Value

Strategy is influenced by the return on GHF index to the extent of 84.7 percent. Therefore, the hypothesis *$H_0$1 (FVS): Return of Fundamental Value Strategy of Equity Hedge of Equity Hedge has no significant relationship on the return of GHF index* rejected.

Table 1.9(ii): Fundamental Value Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.929	0.864	0.847	0.49080	0.864	50.713	1	8	0.000	1.981

$H_0$1 (MUS): The return of the Multi-Strategy Equity Hedge Index shows no correlation with the return of the GHF index.

The influence of Multi-Strategy on the return of the GHF index has been investigated in the sixth sub-theory. The effect was calculated in conditions of returns, i.e. the impact of the Multi-Strategy return on the GHF index return. Now, presumptuous that return on Multi- Strategy has no consequence on the return on GHF index that sixth sub hypothesis *$H_0$1 (MUS): The return of the Multi-Strategy Equity Hedge Index shows no correlation with the return of the GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.10(i) and 1.10(ii).

Table 1.10(i): ANOVA of the Effect of Multi- Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	11.676	1	11.676	37.861	0.000
Residual	2.467	8	0.308		
Total	14.143	9			

Table-1.10(i) shows that the *p* value or significance value is 0.000, which is a smaller amount than 0.05 at the 5% significance level. This means the return on Multi-Strategy and the return on the GHF index have a significant link. Furthermore, when a regression analysis is performed to determine the degree of association stuck between the return on Multi- Strategy and return on GHF index, the result shown in Table-1.10(ii) shows that Adjusted R^2 is 0.804, implying that the return on Multi- Strategy is influenced by the return on GHF index to the extent of 80.4 percent. Therefore, the hypothesis *$H_0$1 (MUS): The*

return of the Multi-Strategy Equity Hedge Index shows no correlation with the return of the GHF index rejected.

Table 1.10(ii): Multi-Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.909	0.826	0.804	0.55533	0.826	37.861	1	8	0.000	2.007

H_01 (TES): The return of the Equity Hedge Technology Strategy has no correlation with the return of the GHF index.

The effect of Technology Strategy on the return of the GHF index has been investigated using the 7th sub-hypothesis. The effect was calculated in conditions of returns, such as; the impact of Technology Strategy on GHF index return. Now, presumptuous that the return on Technology Strategy has no consequence on the return on GHF index that seventh sub hypothesis *H_01 (TES): The return of the Equity Hedge Technology Strategy has no correlation with the return of the GHF index* have been validated by ANOVA, F-test, and regression analysis, and the resulting data are shown in Tables-1.11(ii) and 1.11 (ii).

Table 1.11(i): ANOVA of the Effect of Technology Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	10.753	1	10.753	25.370	0.001
Residual	3.391	8	0.424		
Total	14.143	9			

Table-1.11(i) shows that the *p* value, or significance value, is 0.001, which is a smaller amount than 0.05 at the 5% significance level. This means the return on Technology Strategy and return on the GHF index have a significant link. Furthermore, when a regression analysis is performed to determine the level of association stuck between the return on Technology Strategy and return on GHF index, the result shown in Table-1.11(ii) shows that Adjusted R^2 is 0.730, implying that the return on Technology Strategy is influenced by the return on GHF index to the extent of 73 percent. Therefore, the hypothesis *H_01*

(TES): The return of the Equity Hedge Technology Strategy has no correlation with the return of the GHF index rejected.

Table 1.11(ii): Technology Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.872	0.760	0.730	0.65102	0.760	25.370	1	8	0.001	2.424

$H_0$1 (HES): The return of the Equity Hedge Healthcare Strategy has no correlation with the return of the GHF index.

The effect of Healthcare Strategy on the restoration of the GHF index has been investigated in the eighth sub-hypothesis. The effect was calculated in conditions of returns, such as; the impact of the Healthcare Strategy on the GHF index's return. Now, presumptuous that the return on Healthcare Strategy has no consequence on return on GHF index that eighth sub hypothesis *$H_0$1 (HES): The return of the Equity Hedge Healthcare Strategy has no correlation with the return of the GHF index;* ANOVA, F-test, and regression analysis were used to evaluate the hypothesis, with the results shown in Tables-1.12(i) and 1.12(ii).

Table 1.12(i): ANOVA of the Effect of Healthcare Strategy on GHF Index

	Sum of Squares	df	$\overline{X^2}$	F-test	p-value
Regression	6.801	1	6.801	7.409	0.026
Residual	7.343	8	0.918		
Total	14.143	9			

Table-1.12(i) reveals that the *p* value, or significance value, is 0.026, which, at the 5% significance level, is less than 0.05. This means the return on Healthcare Strategy and the return on GHF index have a significant link. Furthermore, when a regression analysis is performed to determine the degree of association stuck between the return on Healthcare Strategy and return on GHF index, the result shown in Table-1.12(ii) shows that Adjusted R^2 is 0.416, implying that the return on Healthcare Strategy is influenced by the return on GHF index by 41.6 percent. Therefore, the hypothesis *$H_0$1 (HES): The return of the Equity Hedge Healthcare Strategy has no correlation with the return of the GHF index* rejected.

Table 1.12(ii): Interrelationship between the Return of Healthcare Strategy and the Return of the GHF Index: Regression Analysis

R	R^2	Adj. R^2	Std. Error of the Estimate	Change Statistics					DW Statistics
				R^2	F	df1	df2	Sig. F	
0.693	0.481	0.416	0.95804	0.481	7.409	1	8	0.026	2.064

9. Conclusion

Based on information gathered from Eurekahedge and Hedge Fund Research Inc., this study has examined the performance of eight (8) Equity Hedge Strategies (EHS), including Equity Market Neutral Strategy (EMS), Quantitative Directional Strategy (QDS), Sector- Energy/Basic Strategy (SES), Fundamental Growth Strategy (FGS), Fundamental Value Strategy (FVS), Multi-Strategy (MUS), Technology Strategy (TES), and Healthcare Strategy (HES). In terms of recorded performance, it can be seen that the Healthcare Strategy (HES) is the most reliable of the eight (8) discovered Equity Hedge Strategies (EHS). Healthcare Strategy (HES) has extended the time frame and investors profit greatly as a result. It is also pragmatic that the GHF index and (EHS) Equity Hedge Strategies have a favourable association. The hypothesis, *$H_0$1: There is no significance difference between return of Equity Hedge Strategies and the return of GHF index,* along with its eight (8) sub-hypotheses have been rejected. As a result, the returns of Equity Hedge Strategies are significantly different.

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Bank Parikrama
Volume XLVIII, Nos. 1 & 2, March & June, 2023 (pp. 142-173)

Bank Regulation Practices and Competition in the Indian Subcontinent

- Nirmal Singh[*]
- Rachita Gulati[**]

Abstract

Based on the five rounds of the Bank Regulation and Supervision Survey (BRSS) of the World Bank, this study investigates bank regulations governing banking competition in seven countries of the Indian subcontinent: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. Employing the methodology developed by Barth *et al.* (2013), findings show that activity, conglomeration, and entry restrictions have escalated in the banking industries in the subcontinent. Except for Pakistan and Maldives, the banks' promptness in initiating corrective measures has improved across all sampled countries. The restructuring power with the supervisory authority of India and Nepal has improved; however, Sri Lanka and the Maldives have seen a decline in this realm. Findings recommend that steps must be taken to enhance the promptness in initiating corrective measures for troubled banks, particularly in Pakistan and Maldives.

Keywords: Banking Regulations, Competition, Indian Subcontinent Region, Conglomeration, Activity Restrictiveness
JEL Classifications: G18, G21, G28, E58

1. Introduction

A diligent regulatory and institutional environment is a prerequisite for forming and preserving the competition in the banking system (Gulati, 2021). Competition promotes the efficiency of banks by lowering intermediation and other costs (Leon, 2015). The banking industry is one of the most extensively controlled and regulated industries in the world because its failure might have disastrous macroeconomic ramifications. Furthermore, the world economy is so intertwined that the impact of geopolitical events may spread swiftly across the globe. As a result, banking regulations are critical for preserving stability and

[*]Nirmal Singh is a Research Scholar, Department of Humanities and Social Sciences, Indian Institute of Technology, Roorkee, Uttarakhand, India, Email: nsingh@hs.iitr.ac.in[**]Rachita Gulati is an Associate Professor of Economics, Department of Humanities and Social Sciences, Indian Institute of Technology, Roorkee, Uttarakhand, India. Email:rachita.gulati@hs.iitr.ac.in. The views expressed in this paper are the authors' own.

competitiveness in the banking sector[1]. These regulations promote financial stability through the channel of competition (Noman et al. (2018). On the contrary, Claessens and Laeven (2004) noticed that highly regulated banking industries are less competitive. Likewise, Anginer et al. (2014) observed that the banking sector is less stable in countries restricting bank competition through regulations. Over the last few decades, the banking industry has seen substantial changes in banking regulatory and supervisory practices worldwide. Emerging economies, particularly those in the Indian subcontinent, have experienced substantial changes in terms of deregulation, financial globalisation, consolidations, digitalisation, internationalisation and diversification. These developments have upstretched the convolutions in the banking business and raised the need for effective banking regulations. Especially after the GFC, regulators and policymakers have tightened banking regulations to make the banking sector more stable and resilient.

Given the significance of banking regulations in encouraging competition and stability, no commonly accepted set of banking regulations exists to build a stable and competitive banking industry (Barth et al., 2004). Furthermore, academics have differing viewpoints on imposing regulatory restrictions on banks. In the real world, there is a wide range of heterogeneity in the banking regulations practiced across the globe. This might be due to the fact that each country operates in a unique economic and institutional environment. In this regard, Casu et al. (2017) opined that regulations that can help in stabilising the banking system in some countries may not function effectively in other nations with distinct legal and institutional environments. There are numerous laws, bank regulations, and policies in the real world that govern various banking functions and practices, such as capital adequacy norms, entry and exit norms, ownership restrictions, bankruptcy and liquidation regulations, and disclosure norms. In this context, Barth et al. (2013) highlighted that there are numerous complications associated with getting the required data on various banking regulations and then

[1] Banking regulations are set of rules, norms, guidelines and restrictions that governs the functioning of the banks to ensure smooth and transparent conduct of banking practices.

clubbing this data into some aggregate statistically valid measure. Moreover, constant revisions and modifications in banking regulations add to the intricacy.

In this regard, Barth et al. (2013) made significant efforts and devised a framework to examine the banking industry's regulatory and supervisory practices. They created indices that encompassed regulations and policies in sectors such as capital, ownership norms, bank functions, bank entry requirements, supervisory powers and bank governance. The data on regulatory and supervisory practices is based on five surveys, with 73 countries participating in all five rounds. The first survey included 107 countries, whereas the second survey included 152 countries. The third and fourth surveys drew responses from 142 countries. The fifth survey drew participants from 160 countries. All surveys are based on official responses from the national regulatory and supervisory agencies of sampled countries. These surveys featured a series of qualitative and quantitative questions about bank regulation and supervision and minutely investigated these topics. Broadly the structure of the surveys followed the uniformity across the different survey rounds. This feature of the surveys facilitates comparative analysis. The scope of the survey was enlarged during the subsequent rounds of the survey for capturing the dynamic nature of regulatory and supervisory practices.

Against this backdrop, the present study tries to answer the following research question: How have the banking regulatory practices governing competition evolved in the Indian subcontinent region? The study's main objective is to comprehend the regulatory and supervisory practices undertaken to increase competition in the banking industries of the Indian subcontinent region. To achieve this objective, the study constructs various indices assessing the regulations impacting the competition in the region. The second objective of the study is to conduct a comparative analysis of the bank regulations governing competitiveness in the banking industries of the Indian subcontinent region. To achieve this objective, we study the evolution of banking regulations and draw implications for banking competition in the region.

The rest of the sections are structured as follows: The next section deliberates some stylised facts about the banking industry in the Indian subcontinent region.

Subsequently, we discuss the theoretical and empirical literature in the domain, followed by the data and methodology. The next section illustrates the findings, and the final section is concluding in nature.

2. Banking Industry in the Indian Subcontinent Region: Some Stylised Facts

The banking industry in the Indian subcontinent region has become more efficient, competitive, stable, and resilient, predominantly post-liberalisation reforms. As the economies of this region are still developing, the banking industry meets a substantial portion of the region's financial needs. Over time the reach of the banking industry in the region has broadened several folds over time. Given these commonalities, there are notable gaps in several aspects of banking in the region. Table 1 presents some stylised facts about the banking industries of the sampled countries.

The average bank deposits as a percentage of GDP differ significantly across countries. It is highest for Nepal (approximately 66 percent), followed by India. The figure is lowest for Pakistan, which is approximately 33 percent of GDP. The banking industries of Maldives and Bhutan are very concentrated. In the case of Maldives largest three banks hold 100 percent share of total banking assets. Indian and Nepalese banking industries are least concentrated. The government share in total banking assets is highest for India, which amounts to approx. 70 percent. This suggests that government-owned banks play a major role in the Indian banking industry. The share of government banks in total banking assets was the lowest for Pakistan.

Table 1: Banking Market Structure in the Indian Subcontinent Region

Country (Number of Commercial Banks)	Indicator Name	Bank Deposit to GDP (%)	Bank Concentration CR3 (Total Assets)	Government Bank Assets Among Total Banking Assets	Domestic Credit to the Private Sector by Banks (% of GDP)	Commercial Bank Branches (per 100,000 Adults)	Number of ATMs (per 100,000 Adults)
Bangladesh (61)	Mean	46.792	53.807	27.267	38.896	7.893	3.752
	Max	51.110	72.573	28.500	47.411	8.940	8.888
	Min	41.414	29.128	26.100	27.556	7.070	0.129
	SD	3.155	15.124	0.801	6.504	0.678	3.138
	CAGR	0.009	-0.013	-0.006	0.039	0.016	0.353
Bhutan (5)	Mean	58.446	95.766	52.500	38.490	15.476	15.689
	Max	71.031	100.000	56.000	58.073	18.390	43.930
	Min	46.117	92.406	47.000	16.280	13.350	0.463
	SD	8.680	3.060	3.819	12.781	1.818	14.725
	CAGR	0.023	-0.016	0.036	0.095	0.017	0.379
India (74)	Mean	63.702	32.757	70.468	48.089	11.165	11.426
	Max	69.796	37.617	72.260	52.386	14.510	21.997
	Min	53.759	28.804	67.470	36.192	8.860	2.286
	SD	4.418	2.836	1.801	4.609	2.137	7.357
	CAGR	0.012	0.009	-0.014	0.024	0.035	0.189
Maldives (8)	Mean	39.461	100.000	40.167	36.397	11.472	18.436
	Max	43.921	100.000	46.000	55.745	13.160	31.812
	Min	32.616	100.000	34.000	22.451	10.040	6.972
	SD	3.262	0.000	3.848	10.515	1.040	7.286
	CAGR	-0.008	0.000	0.043	0.017	0.019	0.112
Nepal (27)	Mean	65.863	34.078	15.232	50.533	7.000	9.739
	Max	94.657	53.332	18.212	76.169	15.460	14.276
	Min	41.645	22.505	14.321	26.554	2.510	7.352
	SD	17.233	9.383	0.721	14.343	3.804	2.075
	CAGR	0.060	-0.020	0.021	0.078	0.137	0.099
Pakistan (33)	Mean	32.724	67.117	20.487	20.875	8.791	5.332
	Max	36.195	95.250	21.160	28.602	10.280	10.454
	Min	28.790	41.604	19.560	15.305	7.590	0.743
	SD	1.899	14.980	0.520	4.811	0.874	3.097
	CAGR	0.000	0.007	-0.008	-0.023	0.022	0.208
Sri Lanka (24)	Mean	36.253	65.204	48.150	35.941	14.875	14.186
	Max	57.397	74.910	50.400	50.017	18.630	17.204
	Min	27.095	55.603	45.600	25.444	8.700	9.267
	SD	9.645	8.871	1.604	6.967	3.410	2.630
	CAGR	0.043	0.039	-0.013	0.032	0.054	0.080

Source: Authors' calculations based on the Global Financial Development Database
Note: CAGR (Compound Annual Growth Rate)

The number of commercial bank branches per 100,000 adults is lowest in Nepal. The average number of ATMs per 100,000 adult individuals is highest for the Maldives, followed by Bhutan. Bangladesh is at the bottom, with approximately four ATMs per 100,000 adult individuals.

The table demonstrates wide gaps in different domains across banking industries of the Indian subcontinent region. Hence, it can be specified that the banking industry in the region is very heterogeneous. This heterogeneity across countries of the region provides a solid basis for dissimilarity in the regulatory and supervisory practices observed in the region. One size fits all approach while introducing a regulatory framework across these nations cannot work. A calibrated approach must be followed while framing the regulatory framework for sampled countries.

3. Literature Review

Theoretical Literature

Banking history reveals that this industry has experienced several catastrophic events. Numerous systemic banking crises have happened around the globe since 1970, causing massive damage to several economies (Barth et al., 2013). An in-depth examination of these events has revealed that weak banking regulations are the key culprits. Fernández et al. (2013) observed that banking regulation impacts the association between competition and the banking crisis. The banking regulations can restrict as well as promote the competitive environment, which resultantly impacts the performance of this industry. Claessens and Klingebiel (2001) and Barth et al. (2004) observed that higher restrictions on the scope of business activities can negatively impact the competition and efficiency in the banking industry. Demirgüç-Kunt and Peria (2010) observed that entry and exit norms significantly impact contestability and competition in the banking industry. They argued that stringent entry norms combined with low exit norms limit the competition in the banking industry. Kovsted et al. (2005) found that the entry of foreign banks improves the efficiency and stability of domestic banks by increasing the level of competition. Beck et al. (2006) argued that the relationship between bank concentration and

financial stability is influenced by banking institutions' regulations. Barth et al. (2006) claimed that lesser restrictions on the expansion of bank activities assist banks in reaping the benefits of economies of scale and scope. They further argued that a lower level of regulatory restriction on the line of business activities assists banks in income diversification, promoting stability and competitiveness.

Empirical Works on Banking Regulation

The regulatory framework irrefutably plays a crucial role in banking; however, very few studies have explored the regulatory aspect of banking in the extant literature. Barth et al. (2004) assessed the impact of bank regulations on banking sector developments. They revealed that the policies emphasising true information disclosure, strengthening corporate control of private banks, and incentivising the private agents to exercise corporate control promote the banks' development and stability. The regulatory restrictions can significantly impact the degree of competition in the banking industry. In this direction, Shin and Kim (2013) studied the relationship between bank consolidation and competitionin the Korean banking industry. They put forward that post-consolidation, with increased market concentration, the competition has enhanced. The study found evidence against the concentration-fragility hypothesis. Similarly, Andrievskaya and Semenova (2016) investigated how greater information disclosure by banks impacts their market power and concentration. The findings revealed that the banking industries with higher levels of transparency experience lower levels of bank concentration. The study observed that the relationship between the level of transparency and market power is not very strong.

Casu et al. (2017) studied the relationship between the regulatory reforms introduced post-1997 financial crisis and the performance of banks in Asia. They revealed that privatisation and foreign bank entry positively impact efficiency and technological development. Moreover, liberalisation policies have a positive relationship with the performance of banks. Findings suggested that policies that restrict excessive risk-taking harm cost-efficiency. Similarly, Noman et al. (2018) studied the impact of bank regulation on the competition and financial stability nexus. The study investigated Southeast Asian countries and covered the period from 1990 to 2014. The findings revealed a positive impact of competition on

financial stability. Regardless of the extent of competition, bank regulations governing capital regulation and supervision are most successful in improving financial stability. Further, the study observed the impact of activity restrictiveness on financial stability only in very competitive settings.

Gulati (2021) investigated how regulations affecting bank competition have evolved in Brazil, Russia, India, China and South Africa (BRICS) countries. The study's findings revealed that the entry norms have been easing up over time, and the level of competition has diminished in sampled countries. The findings of the study revealed that convergence is taking place in terms of regulatory norms regarding entry into the banking industry, foreign bank entry mode, and control over anti-competitive practices. In this direction, Tongurai and Vithessonthi (2020) studied the impact of bank regulation on the nexus between competition and risk-taking for Japan during the financial crisis. The study found that competition is positively linked with bank risk-taking. Findings revealed that easing of the capital adequacy norms affected the relationship between bank competition and risk-taking.

Teixeira et al. (2020) studied the impact of the investors' protection on the risk of banks. The study investigated the European and US banks and investigated the period from 2004 to 2015. The results revealed that the investors' protection strengthens the negative impact of banking regulation on the risk; on the other hand, banking regulations temperate the positive impact of investor protection on banks' risk. Results suggested that the negative impact of regulations on the banks' risk was very strong during the crisis period. Igan and Mirzaei (2020) investigated how strict bank regulations impact economic growth during the global financial crisis. Using a sample of 50 countries, the study covered the period from 2000 to 2010. They claimed that industries externally financed by banks with higher capital and liquidity ratios performed relatively better in terms of investment rates and business expansion during the crisis.

Asteriou et al. (2021) investigated the relationship between bank regulation, economic freedom, corruption and transparency on the profitability and stability of the banks operating in Eurozone countries and covered the period from 2005 to 2018. The study observed a negative relationship between corruption and bank

profitability/ stability. Findings revealed that regulation positively impacts bank profitability; however, the impact on stability is not clear. Yin (2021) assessed the association between bank competition and efficiency for 148 countries and explored the period from 1995 to 2015. The findings of the study showed that bank competition harms cost-efficiency. The study argued that the regulatory and institutional environment strongly relates to efficiency. According to the study, the relationship between bank competition and efficiency can be improved by efficiently implementing regulations, disclosing information, and using effective supervisory practises.

Martynova and Vogel (2022) conducted an interesting study exploring the relationship between complexity and risk-taking for the German banking industry. The study revealed that banks with complex structures take relatively more risk; however, this relationship weakens over time. Findings showed that banks reduce their complexity when new regulatory norms are imposed to reduce the regulatory costs. The study found a negative impact of diversification on the regulatory costs of banks, which also reduce their risk.

Ananou (2021) studied the relationship between liquidity regulation and lending of the banks of the Netherlands. Findings revealed that liquidity regulations increased the volume of lending. The study further observed that the liquidity regulations also impacted the loan composition, and banks are focusing more on corporate and retail lending. Similarly, Bremus and Ludolph (2021) studied the role of capital regulation on the relationship between bank size and volatility. The study investigated 27 advanced economies and covered the period from 2000 to 2014. Results suggested that strict capital regulation weakens the relationship between bank size and portfolio volatility. Countries with strict capital regulation have a strong negative impact on bank size on volatility compared to countries with less stringent rules. Moreover, higher sectoral capital buffers weaken the relationship between bank size and volatility.

The literature review suggests that regulatory frameworks play an essential role in the banking industry. It has wider repercussions for the competition and stability of the banks. There are a minimal number of studies exploring the banking regulations of emerging economies. The majority of research on this

subject is concentrated in developed economies. The present study contributes to the literature by exploring the banking regulations impacting the banking competition in the Indian subcontinent region.

4. Data and Methodology

The investigation includes all seven countries of the Indian subcontinent region: Bangladesh, Bhutan, India, Nepal, Pakistan, Maldives, and Sri Lanka. The data for the assessment of regulatory and supervisory practices of sampled countries is from the five rounds of the Bank Regulation and Supervision Survey (BRSS) of the World Bank. These surveys inquired about various regulatory and supervisory practices followed by banks across the globe. One significant attribute of these surveys is that although the number of questions increased over the different survey rounds, the broad structure and framework remained unchanged. The addition of questions took place to enhance the comprehensiveness of the survey and to factor in the changing regulatory and supervisory practices in the banking industry across the world. The data on the banking sectors' total assets is from the Global Financial Development database of the World Bank.

We construct various regulatory indices to evaluate the banking regulatory and supervisory practices of sampled countries. Detailed information about the indices is given in Table-2. We followed the methodological framework of Barth et al. (2013) and empirically adopted by Gulati (2021) for constructing a regulatory index capturing different aspects of bank regulations. There are two approaches for the construction of the index, namely the "all index approach" and "all average scaled index" approach. The former "all-index" approach is employed when all responses to a set of questions for a particular regulatory index are available. The later "all average scaled index" approach is well suited when at least 50 percent of responses to questions are provided by the country. In the Indian subcontinent, few countries have unanswered one or few questions therefore, we rely on the latter method for the construction of an index. In this approach, at least three or more questions are included to construct an index. The scaled index value is thus calculated as the average of the available answers

multiplied by the total number of questions included in that particular index. The index value for i^{th} regulation in the banking industry of the j^{th} country is computed as follows:

$$R_i = \frac{\sum \text{Restrictions in each category for } j^{\text{th}} \text{ country's banking industry}}{\text{Maximum number of restrictions}} \times 100$$

$$= \frac{\text{All average scaled index for } j^{\text{th}} \text{ country's banking industry}}{\text{Maximum number of restrictions}} \times 100$$

The weighted average index value of each individual country is combined to compute the index value for the region, and the banking assets as a percentage of GDP are employed as a weighting criterion.

Activity Restrictiveness

Over time, the banking industry has experienced several developments across the globe. Due to financial globalisation and innovations, the functioning of this industry has become very complex. These complexities can trigger vulnerabilities in the banking sector; hence it is intensively regulated and monitored. Regulatory authorities across the globe impose restrictions on the activities which banks can perform. In this regard, some countries provide more flexibility to banks compared to others. The regulatory authorities mainly impose restrictions on three business activities: Dealing in securities, insurance and real estate investment. These are the key non-traditional activities that can assist banks in diversifying risk; however, they can also inculcate risk.

The BRSS provides information regarding activity restrictiveness. The responses about activity restrictiveness are coded as unrestricted (1), permitted (2), restricted (3) and prohibited (4). Unrestricted implies that the banks can perform all three activities mentioned above; however, permitted implies that all three activities can be performed; however, all or some must be performed by the subsidiaries of the banks. Restricted implies that the bank or its subsidiaries cannot perform all activities. Prohibited implies that the activities cannot be performed at all. Hence, a higher composite index value implies higher restrictiveness on trading in securities, insurance, and real estate activities. The

maximum score in activity restrictiveness can be 12 if all three activities are prohibited.

Conglomeration Restrictiveness

Conglomeration in banking can be detrimental and can lead to inefficiency. In the global context, several countries allow cross-ownership. The BRSS database provides information about the restrictiveness on conglomeration formation. The information provided in the surveys in this regard includes (1) Restrictiveness on banks from owning a non-financial firm, (2) restrictiveness on non-financial firms from owning a bank, and (3) restrictiveness on non-bank financial firms owning a bank. The responses about the conglomeration restrictiveness are coded as unrestricted (1), permitted (2), restricted (3) and prohibited (4)[2]. Hence the higher value of the composite index implies higher restrictiveness on conglomeration formation. The maximum score in this regard can be 12 if all three activities are prohibited.

Entry Restrictiveness

The entry norms play a crucial role in impacting the competition in the banking sector. The entry restriction norms limit the entry of domestic and foreign banks. These restrictions may include licensing and other document requirements which a new entrant needs to fulfil. These requirements vary significantly across the globe. The BRSS provides information regarding entry restrictiveness, which includes the following document requirements. (1) Draft by law (2) The organisational chart (3) Financial projections (4) Financial background of potential shareholders (5) Background of directors (6) Background of the management board (7) Details of the financial sources (8) Intended market differentiation. These restrictions may act as a check to ensure that only players with sound backgrounds and well intentions enter the banking business.

[2] In case of restrictiveness on bank from owning non-financial firm the code "unrestricted" implies that banks can own 100% equity in a non-financial firm. "Permitted" implies that bank can own 100% equity; however, the ownership will depend upon the bank's equity capital. "Restricted" implies that a bank cannot acquire 100% equity of a non-financial firm. "Prohibited implies that a bank cannot own equity in non-financial firm at all.

Exit of Bank and Resolution Power of Supervisory Authorities

The exit norms and resolution power of supervisory authorities specify the set of regulatory norms to be followed if a bank opts to exit the banking business or faces difficulty conducting its day-to-day affairs. It also reflects upon the independence of the supervisory authorities to initiate various resolution measures for a troubled bank. These resolution measures may include recapitalisation, liquidation, or restructuring of the banks. Post the GFC, banking regulators and policymakers across the globe have put several measures to ensure smooth exit and effective bank resolution practices. A timely resolution of issues of a troubled bank can reduce the risk, which otherwise might cause severe damage to the banking industry. In this regard, we investigated four major areas governing bank exit and the resolution power of supervisory authorities: (1) promptness in initiating corrective action if a bank faces some trouble, (2) independence of the supervisory authority, (3) decision-making power of the supervisory authority, and (4) restructuring power with the supervisory authority. Detailed information about the regulations and their definitions are provided in Table-2.

Table 2: Bank Regulations Governing Competition and Definitions

Index/ Parameter	Definition	Questions	Quantification of Responses
Line of Business Activities			
(i) Activity Restrictiveness Index (ARI)	The extent of restrictions on banks participating in: Security trading, insurance and real estate.	Can banks perform the following activities? (i) Securities (ii) Insurance (iii) Real estate	Unrestricted = 1 Permitted = 2 Restricted = 3 Prohibited = 4 A higher value represents greater rigidity. The index value is scaled such that it varies between zero and one hundred.
(ii) Conglomeration Restrictiveness Index (CRI)	The extent of restrictions to which: (i) A bank can own equity in a non-financial firm (ii) A non-financial firm can own equity in a bank (iii) A non-bank financial firm can own equity in a bank.	Can banks engage in non-financial business (other than the primary business of financial intermediation)	Unrestricted = 1 Permitted = 2 Restricted = 3 Prohibited = 4 A higher value represents greater rigidity. The index value is scaled such that it varies between zero and one hundred.

Index/ Parameter	Definition	Questions	Quantification of Responses
Entry Barriers/ Restrictions			
(i)Requirements for entering into banking	The extent of requirements to be fulfilled to enter the banking business.	What kind of legal documents are required to obtain a banking licence?	Yes = 1 No = 0 A higher value represents greater rigidity. The index varies between zero and one hundred.
(ii) Restriction on the modes of entry of foreign banks.	The extent of the restrictions on the entry of foreign banks through different modes	Are foreign banks restricted from entering the banking business by the following modes? (i) Acquiring a domestic bank (ii) By becoming a subsidiary (iii) Through branch (iv) Joint venture	Yes = 1 No = 0 A higher value represents higher rigidity. The index varies between zero and one hundred.
(iii) Percentage of entry applications denied	The degree to which the entry applications received are denied.	How many bank entry applications have been rejected in the last 5 five years?	Percentage of denial of applications out of the total application filed in the last five years.
(iv) Government ownership (%)	The market share of government in total banking assets.	What is the share of the Government in total banking assets?	Government share in Percentage.
Exit of Bank and Resolution Power of Supervisory Authorities			
(i) Prompt Corrective Action Index (PCAI)	Is there a law-pre-defined level of solvency deterioration which initiates instinctive corrective measures?	Is there a mechanism to terminate and desist-type orders? Can supervisory authority suspend the directors' decision? Can supervisory authority order the director of the banks to make provisions for losses? Can supervisory authority compel a bank to alter its inner organisational structure?	Yes = 1; No = 0 The index ranges between 0-100. A high value of PCAI implies quick promptness for initiating a corrective measure.

Index/ Parameter	Definition	Questions	Quantification of Responses
(ii) Independence of supervisory authority	The extent to which the supervisory authority is free from political influences and legal authorities.	To whom are supervisory authority answerable? Are the supervisors of the bank legally responsible for their actions?	The index ranges between 0-100. A higher value implies more independence of supervisory authority.
(iii) Insolvency Declaration Power Index (IDPI)	Can the supervisory authorities declare insolvency in case of a troubled bank?	Who has the power to declare insolvency in case of a troubled bank? Which authority can suspend few or all rights of a bank in trouble?	Bank supervisor =1; Court = 0; Deposit insurance agency = 0.5 Assets management or restructuring agency = 0.5 Other = 0 The index value ranges between 0 and 100. A higher value implies more power is in the hands of the supervisory authority.
(iv) Restructuring Power Index (RPI)	If a bank in trouble can be restructured and reorganised by supervisory authority.	Which regulatory authority has the power to initiate resolution activities in case of a troubled bank?	Bank supervisor = 1 Court = 0 Deposit insurance agency = 0.5 Assets management or restructuring agency = 0.5 Other = 0 The index value ranges between 0 and 100. A higher value implies more power is in the hands of the supervisory authority.

Source: Authors elaboration from BRSS

5. Results and Discussion

Assessment of Activity Restrictiveness

Traditionally banks perform the key function of financial intermediation; however, at present, these institutions can also engage in a variety of non-traditional activities and can diversify their risk exposure. Non-traditional activities can improve competition and assist in risk diversification; however, excessive exposure to these non-traditional activities can raise the probability of fragility. We have constructed two indices in this regard: The activity restrictiveness index and the Conglomeration restrictiveness index. The first index captures the extent of regulatory restrictions to which a bank is restricted

from engaging in the business line of securities, insurance and real estate. The latter captures the degree of restrictiveness on bank, non-financial and non-bank firms from entering into each other's business and forming a financial conglomeration. The conglomerations can reduce the competition and efficiency of the banking sector by promoting collusive behaviour and cartel formation. Both indices range from 1 (unrestricted) to 4 (Prohibited). For the activity restrictiveness index, the maximum score can be 12 if all three activities are prohibited. The minimum activity restriction score can be three if all three activities are unrestricted. Panel 1 of Table 3 presents the findings with respect to the activity restrictiveness and conglomeration restrictiveness in the sampled countries.

Results establish that, as per the most recent survey Bhutanese banking industry is the most activity-restricted banking industry, followed by Bangladesh in the Indian subcontinent region. On the other hand, the banking industry of Maldives is the least restricted in this domain. Over the years, the Bhutanese banking industry has experienced some decline in the activity restrictions; however, the insurance activity remained prohibited across all surveys. The Indian banking industry experienced some decline in the activity restrictiveness as per the 2007 survey; however, it increased post-GFC period. The recent survey of 2017 again shows some decline in the activity restrictiveness in the Indian banking industry. The banking industry of Sri Lanka was the least activity restricted banking industry in the region; however, the activity restrictiveness has intensified over the years. Similarly, the banking industry of Bangladesh has also experienced a rise in activity restrictiveness. Insurance and real estate activity remained prohibited in the Bangladeshi banking industry across all surveys. The survey of 2003 reports that broadly, the activity restrictiveness was at the same level in banking industries of the Indian subcontinent region. During this period, most of the banking industries were restricted from engaging in the real estate business; however, most of them were permitted to trade in securities. Largely, findings suggest that the activity restrictiveness has intensified over time in the Indian subcontinent region. This phenomenon can have wider repercussions for the banking competition in the region. Higher activity restrictiveness can limit

the scope of risk diversification and weaken the sector's efficiency by undermining competitiveness.

Table 3: Line of Business Activities in the Indian Subcontinent Region

Country	2000	2003	2007	2011	2017
1. Activity Restrictiveness Index					
Bangladesh	75	n.a	75	83.3	83.3
Bhutan	91.7	75	75	58.3	91.7
India	75	75	66.7	75	66.7
Maldives	75	75	75	66.7	50
Nepal	62.5	n.a	n.a	75	75
Pakistan	n.a	75	83.3	66.7	66.7
Sri Lanka	33.3	75	75	50	66.7
Indian Subcontinent	65.8	69.8	68.9	74.6	67.3
2. Conglomeration Restrictiveness Index					
Bangladesh	75	n.a	91.7	n.a.	91.7
Bhutan	75	75	75	83.3	91.7
India	58.3	75	75	83.3	91.7
Maldives	62.5	n.a	58.3	66.7	58.3
Nepal	66.7	n.a	n.a	n.a	83.3
Pakistan	n.a	58.3	75	58.3	75
Sri Lanka	75	75	75	33.3	83.3
Indian Subcontinent	53.1	68.1	76	74.1	89.3

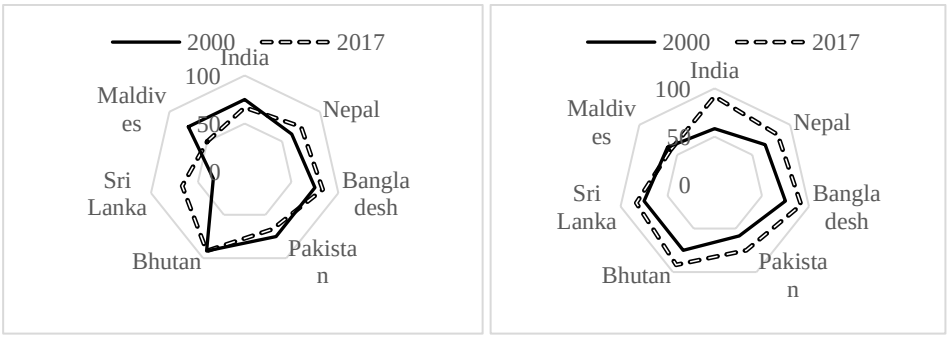
Source: Authors' computations from BRSS
Note: Higher index value signifies a higher level of restrictiveness. Minimum and maximum achievable index values are 25 and 100, respectively. The regional index value is computed using the weighted average of the banking sector's assets, n.a implies data is not available.

Panel-2 of Table-3 illustrates the conglomeration restrictiveness in the banking industries of sampled countries. The Indian banking industry was least restricted to forming conglomerations compared to other sample countries. However, the subsequent surveys reveal that the conglomeration restrictiveness has increased over the years. Post the GFC, the banks in India were prohibited from owning a non-financial firm. The banking industries of Bangladesh, Bhutanese, and Sri Lanka were most restricted to form a conglomeration in 2000. During this year, bank ownership of non-financial firms was restricted in these countries. The survey of 2017 reveals that the conglomeration restrictiveness was highest during this period in all countries except for the Maldives. During this period, bank owning a non-financial firm was prohibited in all sample countries

except for the Maldives and Sri Lanka. Moreover, non-financial and non-bank financial undertakings were restricted from owning equity in a bank in most of the banking industries of the region except for Pakistan and Maldives. Broadly, findings suggest that the restrictions on conglomeration formation have increased over the period of time in the Indian subcontinent region. This increased restrictiveness of conglomeration can inhibit cartel formation and collusive behaviour among banks. Higher conglomerate restrictions can enhance fair competition among existing market players and attract new entrants.

Figure-1(a): illustrates that activity restrictions have grown in the banking industries of Nepal, Bangladesh, and Sri Lanka. The most significant rise is seen in the banking industry of Sri Lanka. The activity restrictions have decreased in India, Pakistan, and the Maldives. The Maldives' banking industry has seen the most substantial decrease in this domain. When compared to other banking industries in the Indian subcontinent region, Bhutan's degree of activity restriction was the highest and stayed unchanged.

Figure 1: Activity and Conglomeration Restrictiveness Indices in 2000 and 2017



(a) Activity Restrictiveness (b) Conglomeration Restrictiveness

Figure-1(b) exhibits that conglomeration restrictiveness has increased in the case of all the banking industries of the Indian subcontinent region except for the Maldives. The banking industry of Maldives experienced some decline in the conglomeration restrictiveness in 2017 compared to the restrictiveness level in 2000. The largest increase in conglomeration restrictiveness is evident in case of India during the study period.

Entry Requirements and Foreign Bank Entry

The entry norms in the industry play a critical role in impacting the degree of competition. Higher entry restrictions limit the number of market participants in the industry. To assess the level of entry restrictiveness in the banking industries of the Indian subcontinent region, we investigated the following regulatory norms: entry requirements for the banking business, ease of foreign bank entry, market share of government-owned banks and proportion of entry applications denied from domestic and foreign players.

Table-4 summarises the entry norms of the banking industries of the Indian subcontinent region. Panel 1 of the table exhibits the assessment of the regulatory practices governing the entry requirements for the banking business. The table demonstrates that as per the survey of 2000, the Nepalese and Sri Lankan banking industry was the most entry-restricted, whereas the Indian and Bangladeshi banking industries were the least entry-restricted. The entry requirements for the banking business have increased over the years in most of the countries of the region. In the recent survey of 2017, Nepal, Bangladesh, Pakistan, and Maldives were at the top in terms of entry restrictions.

Table 4. Entry Regulations in the Sampled Countries

Country	2000	2003	2007	2011	2017
1. Entry Requirement for the Banking Business					
Bangladesh	75	75	75	87.5	100
Bhutan	87.5	100	100	87.5	80
India	75	75	75	100	80
Maldives	87.5	80	100	100	100
Nepal	100	n.a.	n.a.	100	100
Pakistan	87.5	87.5	100	100	100
Sri Lanka	100	100	100	100	80
Indian Subcontinent	76.3	76	77.75	99.1	82.2
2 Ease of Foreign Bank Entry (Higher Value Means Less Limitations)					
Bangladesh	100	100	100	100	100
Bhutan	100	100	100	100	100
India	100	100	100	100	100
Maldives	100	100	100	100	100
Nepal	n.a.	n.a.	na	75	75

Pakistan	100	100	100	100	100
Sri Lanka	100	100	100	100	100
Indian Subcontinent	98	99	100	99.8	98.8
Source: Authors' computations from BRSS					

Combinedly, these findings suggest that the banking industry in the Indian subcontinent has intensified the entry restriction, which can have negative repercussions on the level of competition in the region. However, contrary to this, a strict entry practice can ensure the entry of only the fittest players to the banking business.

Panel-2 presents the findings about the ease of degree to which foreign banks can enter into the banking business through a different channel like acquisition, subsidiary or branch. The entry of foreign banks can improve the efficiency of domestic banks by raising the level of competition in the industry. Results in this regard reveal that there have been no restrictions on foreign bank entry through different channels in most countries during different surveys. The most recent survey shows that entry of foreign banks into the Nepalese banking industry is somewhat less easy compared to other sampled countries.

Domestic and Foreign Entry Denial and Government Ownership

Panel-1 of Table-5 shows the findings about the domestic and foreign entry denial in the region. Many countries have not reported the information in this regard; moreover, several countries have not received entry applications at all in some years. The entry denial in both categories has exhibited a rising trend in the case of India during different sample periods.

Table 5: Ownership Regulations in the Sampled Countries

Country	**2000**	**2003**	**2007**	**2011**	**2017**
1. Entry Application Denied (%) ***(i) Domestic***					
Bangladesh	82.5	n.a.	n.a.	*	76.7
Bhutan	100	*	n.a.	0	n.a.
India	54.5	80	80	100	81
Maldives	*	n.a.	*	*	*
Nepal	21.4	n.a.	n.a.	0	n.a.
Country	**2000**	**2003**	**2007**	**2011**	**2017**

Pakistan	n.a.	91.7	*	0	0
Sri Lanka	n.a.	0	n.a.	0	0
Indian Subcontinent	48.5	74	66.4	84	71
(ii) Foreign					
Bangladesh	42.9	n.a.	*	100	100
Bhutan	*	*	*	33.3	*
India	27.9	25	42.9	26.3	*
Maldives	100	n.a.	80	0	0
Nepal	*	n.a.	n.a.	n.a.	n.a.
Pakistan	n.a.	*	0	0	*
Sri Lanka	*	0	n.a.	80	50
Indian Subcontinent	24.7	20.3	35.6	30.7	33.9
2. Market Share of the Government-owned Bank (%)					
Bangladesh	69.9	n.a.	46.8	34.1	27.6
Bhutan	60	n.a.	67.4	47.6	56
India	80	75.3	74	73.7	67.5
Maldives	75	n.a	48.7	38.7	42
Nepal	20	n.a.	n.a.	24.31	24.31
Pakistan	53.79	53.79	19.8	21	20.3
Sri Lanka	55	n.a	49	59.1	45.6
Indian Subcontinent	69.6	66.4	67	67	59.4

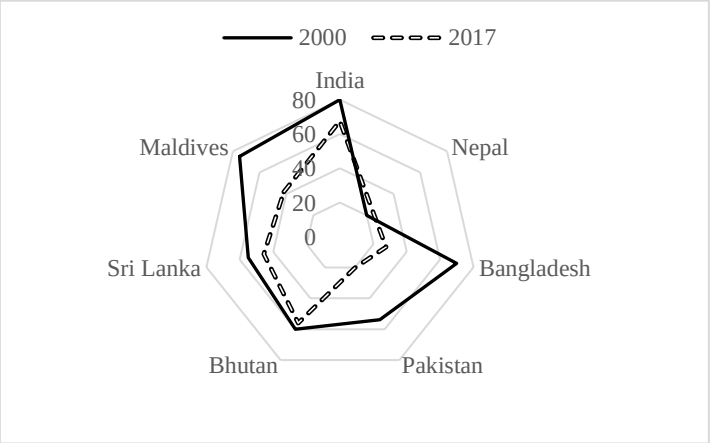
Source: Authors' computations from BRSS

Note: * indicates no entry application was received; n.a implies data is not available.

Panel-2 of Table-5 summarises the market share of government-owned banks. It reveals that the share of government-controlled banks has declined over the years in all sampled countries. The market share of government-owned banks in India has continuously declined from 80 percent in 2000 to 67.5 in 2017; however, it is still the highest compared to its peer countries. In the year 2017, the market share of government-owned banks stood lowest in the case of Pakistan, followed by Bangladesh.

Figure-3 depicts the changes in the share of government-owned banks in sampled countries during the study period. The radar chart shows that the market share of government-owned banks has declined in all sampled countries except for Nepal, where it has increased slightly.

Figure 3: Market Share of Government-owned Banks



Bangladesh has seen the most significant decrease in the percentage share of government-owned banks. The share of government-owned banks in Pakistan and the Maldives has also decreased. Bhutan's banking sector has experienced the least reduction in this category. The share of government-owned banks is highest in case of the Indian banking industry, followed by Bhutan. Broadly findings appear to suggest that the market share of government-owned banks is declining in the region. Theoretically, a decline in the government ownership of the banks provides room for the private players in the industry to expand their scope, which can reinforce the competition and efficiency of the banks.

Resolution and Supervision Independence

The study constructed the Prompt Corrective Action Index (PCAI). PCAI captures the capability of the supervisory authority to take quick actions to resolve the issues of a troubled bank. This index assesses whether there is a law-defined level of solvency that initiates automatic corrective action in a troubled bank. The index value ranges between (0-6). A higher index value implies there exists a regulation that initiates prompt action to capture the irregularities in the functioning of a bank. Panel A of table 6 presents the PCAI score for the sample countries.

Table 6. Resolution Power with Supervisory Authorities

Country	2000	2003	2007	2011	2017
A. Prompt Corrective Action Index (Lower Value Implies Less Promptness Yes 1 No 0)					
Bangladesh	0	n.a.	0	83	83
Bhutan	0	66.8	33.2	100	100
India	0	0	0	83	100
Maldives	0	0	0	0	0
Nepal	0	n.a.	n.a.	100	100
Pakistan	n.a	100	0	0	0
Sri Lanka	0	0	50	100	100
Indian Subcontinent	0	10	0	78.5	90.8
B. Independence of Supervisory Authority (Lower Value Implies Less Independence)					
Bangladesh	87.5	n.a.	37.5	75	87.5
Bhutan	0	87.5	25	0	n.a
India	87.5	87.5	87.5	100	87.5
Maldives	87.5	n.a.	87.5	87.5	37.5
Nepal	87.5	n.a.	n.a.	25	87.5
Pakistan	87.5	87.5	87.5	87.5	87.5
Sri Lanka	n.a.	87.5	87.5	75	12.5
Indian Subcontinent	84.9	81.4	84.5	96.3	84.4
C. Index of Insolvency Power					
Bangladesh	25	n.a.	25	25	25
Bhutan	50	50	25	25	n.a.
India	0	25	0	0	25
Maldives	50	n.a.	50	37.5	25
Nepal	n.a.	n.a.	n.a.	n.a.	50
Pakistan	n.a	25	50	50	50
Sri Lanka	n.a	50	25	0	0
Indian Subcontinent	1.25	23.8	6.5	4.75	26
D. Restructuring Power Index					
Bangladesh	50	50	50	50	50
Bhutan	50	50	16.6	50	50
India	33.2	33.2	33.2	33.2	50
Maldives	50	33.2	33.2	33.2	33.2
Nepal	33.2	n.a.	n.a.	n.a.	50
Pakistan	50	50	50	50	50
Sri Lanka	50	33.2	33.2	33.2	33.2
Indian Subcontinent	35.4	35.6	35.7	35	50

Source: Authors' computations from BRSS

Note: n.a implies data is not available

Broadly, index values depict an improvement in the PCAI score for all countries. During the first survey, all sampled countries scored zero, which implies no promptness in resolving the issues of a troubled bank. Over a period of time, this index has exhibited improvement across all countries. In the most recent survey of 2017, most countries exhibited a high level of promptness except Pakistan and Maldives. The independence of supervisory authority in taking decisions play a vital role in the banking industry.

Panel-B provides the findings about the independence of the supervisory authority in the sampled countries. These findings are derived from the following survey questions. To whom are supervisors answerable? Are the supervisors of the bank legally responsible for their actions? In 2000, Bhutan was the lowest performer in this domain, and the least independence was granted to the supervisory authority. During this period, the bank supervisors were answerable to many authorities, including the central bank governor, finance secretary, finance minister, and board of directors. In addition to that, the bank supervisors were legally responsible for their actions in Bhutan, which was not the case in the other peer group countries. Sri Lanka has experienced the largest decline in the independence of supervisory authority, followed by the Maldives during the study period. In the recent survey of 2017, these countries were providing the least independence to supervisory authorities compared to other countries of the region. Both countries changed the regulations governing the legal responsibility of the supervisory authority and made the bank supervisors legally responsible if the bank faces losses due to their actions.

Panel-C and D summarise the findings of the insolvency and restructuring powers with the supervisory authorities. The "Insolvency power" and "restructuring power" scores vary between zero and six, with the index score varies from 0-100. These indices demonstrate the extent of supervisory powers to put a bank restructuring measure in place or declare bank insolvency in case of a troubled bank. The results indicate an improvement in the insolvency declaration power of supervisors in the case of Pakistan. In the case of Bhutan, a decline in the insolvency power is evident, suggesting a decline in the power of the supervisor to declare a troubled bank insolvent. In the case of Nepal, data was

not reported in most of the surveys. In the case of Bangladesh, this domain remained unchanged during different surveys. The restructuring power index suggests that the banking industries of India and Nepal have experienced an improvement, suggesting a rise in the supervisors' power for bank restructuring. Contrary to this, Sri Lanka and Maldives have experienced a downturn in this domain. The performance of Bangladesh, Pakistan and Bhutan remained stable in this domain.

Table-7 discusses various bank regulations affecting the competition in the Indian subcontinent region and ranks the countries as per their level of competitiveness in that particular domain. The activity restrictiveness and conglomeration restrictiveness index designates the baking industry of Maldives as least activity restricted. The Bhutanese banking industry is the most activity restricted, followed by Bangladesh. Bank entry regulations play a crucial role in the overall competition in the industry. In this domain banking industries of Sri Lanka and Bhutan requires relatively fewer document submissions for entry. The share of government-owned banks in the Indian banking industry is the highest; however, it has declined over the years. The banking industry of Pakistan is most competitive in this domain, with the least share of government-owned banks. The banking industries of the Maldives and Pakistan are the least prompt in initiating corrective action for distressed banks. India, Nepal, Bhutan, and Sri Lanka are relatively more prompt in initiating corrective measures. Less promptness in initiating corrective measures might undermine the bank performance and weaken competitiveness.

The banking industry is a complex system and is surrounded by several risks. The problem resolution at the right time can improve the performance of the banks and put the fragile banks back on track which can avert big adverse events. Problem resolution by the courts might take a relatively long time which can bourgeon the magnitude of the problem. Hence the supervisory authorities must be given higher operational independence for problem resolution so that they can decode the magnitude of risk on time and take the corrective measure accordingly.

Table 7: Bank Regulations and Competition in the Indian Subcontinent Region (as on 2017)

S.N.	Regulation	Relative Competitiveness (From Highest to Lowest)	Impact of Regulation on Competition	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
1	Activity restrictiveness	Maldives > Sri Lanka = Pakistan = India > Nepal > Bangladesh > Bhutan	Higher restrictiveness lowers the competitiveness	Complete prohibition on the insurance and real estate business	Most restricted with Complete prohibition on the insurance and real estate business	Complete prohibition on the real estate business	Least restricted with complete freedom to engage in securities and insurance business	Some limits on the securities, insurance and real estate business	Some limits on the insurance and real estate business	Complete prohibition on the real estate business and completer freedom on trading in securities
2	Conglomeration restrictiveness	Maldives > Pakistan > Sri Lanka > Bhutan = Bangladesh = Nepal = India	Higher restrictiveness lowers the competitiveness	Complete prohibition on bank engaging in non-financial business and Some restrictions on non-financial firms and non-bank financial firms engaging in banking business	Complete prohibition on bank engaging in non-financial business and Some restrictions on non-financial firms and non-bank financial firms engaging in banking business	Complete prohibition on bank engaging in non-financial business and Some restrictions on non-financial firms and non-bank financial firms engaging in banking business	Least restricted with complete freedom on bank engaging in non-financial business and non-financial firms and non-bank financial firms are permitted to engage in the banking business	Some restrictions on non-financial firms and non-bank financial firms engaging in banking business and complete prohibition on bank engaging in non-financial business	Non-financial firms and non-bank financial firms are permitted to engaging in banking business and complete prohibition on banks engaging in non-financial business	Some restrictions on bank engaging in non-financial business, non-financial engaging in banking business and non-bank financial firm engaging in banking business
3	Entry requirements into banking industry	Sri Lanka = Bhutan = India > Maldives = Pakistan = Bangladesh = Nepal	Strict regulations lower the competition in the industry	All documents are required to be submitted	Details about the experience of future managers and the background of potential shareholders is not required to be submitted	Background information of the future board of directors and senior managers is not compulsory to be submitted	All documents are required to be submitted	All documents are required to be submitted	All documents are required to be submitted	The intended organisational chart and source of funds to be used as capital need not to be disclosed
4	Ease of the foreign bank entry	India = Pakistan = Sri Lanka = Maldives > Nepal = Bhutan > Bangladesh	Higher restrictiveness lowers the competition in the industry	Foreign bank entry only as Branch and joint venture	Foreign banks cannot enter through acquisition	No restrictions on foreign bank entry	No restrictions	Foreign banks cannot acquire a bank	No restrictions on the entry of foreign bank.	No restrictions
5	Domestic entry Denied	Pakistan = Sri Lanka > Bangladesh > India	Higher entry denial lowers the competition	76.7 percent domestic entry application denied	n.a.	Highest percentage of domestic entry denial (81%)	*	n.a.	No domestic entry application denied	No domestic entry application denied

S.N.	Regulation	Relative Competitiveness (From Highest to Lowest)	Impact of Regulation on Competition	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
6	Foreign entry Denied	Sri Lanka > Bangladesh	Higher entry denial lowers the competition	100% foreign banks entry application denied	*	*	n.a.	n.a.	*	50% foreign bank entry application denied
7	Government ownership	Pakistan > Nepal = Bangladesh > Maldives > Sir Lanka > Bhutan > India	Higher control of government lowers the competitiveness in the industry	Approx. 25% assets with government-controlled banks	A hight percentage of assets with government-controlled bank (56)	A hight percentage of assets with government-controlled bank (67.5)	Approx. 40 % assets with government-controlled banks	Approx. 25% assets with government-controlled banks	Approx. 20% assets with government-controlled banks	Approx. 45% assets with government-controlled banks
8	Prompt corrective action	India = Nepal = Bhutan = Sri Lanka > Bangladesh > Pakistan = Maldives	Higher promptness for corrective action increase competition	Relatively less prompt for corrective action	High promptness for corrective action	High promptness for corrective action	No prompt corrective action	High promptness for corrective action	No prompt corrective action	High promptness for corrective action
9	Independence of the supervisory authority	India = Nepal = Bangladesh = Pakistan > Maldives > Sri Lanka	Higher accountability, less freedom leads to less competition	Less potential for government interference	n.a.	Less potential for government interference.	Less independent supervisory authority.	Less potential for government interference	Less potential for government interference	Least independent. High potential of government interference
10	Insolvency power	Nepal = Pakistan > India = Bangladesh = Maldives = Sri Lanka	More power promotes more exit and competition	The court pronounces a bank insolvency hence few control with the supervisor.	n.a.	Court declares insolvency ; hence fewer power with the supervisor	Court declares insolvency; hence supervisor has less power	Bank supervisor declare a bank insolvent.	Supervisory authority declares insolvency	Court declares insolvency hence fewer control with the supervisor
11	Resolution/ Restructuring power	India = Nepal = Bangladesh = Pakistan = Maldives > Sri Lanka	More power promotes competition and exit of the banks from the industry	The supervisor of the banks undertakes the restructuring/resolution measure	n.a.	The supervisor of the banks initiates the restructuring action	The supervisor of the banks undertakes the restructuring/resolution measure	The supervisor of the banks undertakes the restructuring/resolution measure	The supervisor of the banks undertakes the restructuring/resolution measure	Least restructuring power, Judiciary has the power to initiate restructuring/ resolution measures

Source: Authors' Elaborations

Note: * indicates no entry application was received, n.a implies data is not available.

6. Conclusions and Policy Implications

This paper investigates the banking regulations that govern competitive conditions for the banking industry in the Indian subcontinent. Using data from five rounds of Bank Regulation and Supervision Surveys (BRSS) of the World Bank, the methodological framework of Barth et al. (2013) is adopted to construct regulatory indices. The study examines seven countries of the Indian subcontinent: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka. The findings divulge that activity and conglomeration restrictiveness has enlarged for banks in the Indian subcontinent over time. These restrictions can have wider repercussions for the banking competition in the region. A higher level of activity restriction can limit the scope of risk diversification. Findings further reveal that the entry requirements for the banking business have increased over the years in most of the sampled countries. This trend has notably picked up post-crisis. Stricter entry norms can limit new market entrants, ensure the entry of strong market entrants, and foster robust competition in the banking industry.

The study also reveals that the share of government-controlled banks has declined over the years in all sampled countries. From the dwindling market share of government-owned banks, it can be anticipated that this trend would open up more prospects for private players, potentially boosting the banking competition in the region. On bank promptness, we find that, except for Pakistan and Maldives, the promptness of banks to initiate resolution measures for troubled banks has improved in all countries of the region. Higher promptness to initiate corrective actions for troubled banks can address the problem well on time and positively foster competition in the industry. Further findings reveal that the supervisory authority in Sri Lanka is the least independent compared to other sampled countries. Less independence of supervisory authority can deter the ability of the supervisors to initiate necessary measures for resolving various issues. The restructuring powers of the bank supervisory authority of India and Nepal have improved significantly. Contrary to this, supervisory authorities in Sri Lanka and Maldives have experienced a decline in bank restructuring powers.

Based on the analysis, the study draws implications and suggestions for banking competition in the region. First, regulatory authorities can attempt to carefully comprehend how rising activity restrictions impact the bank's diversification potential and non-interest income. Moreover, growing conglomeration restrictions restrict cartel formation and anti-competition practices in the banking sector. The regulations are important; however, care must be taken to prevent increased restrictions hampering competition practice. Second, it is recommended that regulatory authorities in Pakistan and Maldives can take adequate measure to enhance the promptness of supervisor in initiating corrective action in case a bank face difficulty in conducting its operations. Finally, the study suggests that regulatory authorities must grant more "operational independence" to supervisory authorities to restructure or declare bank insolvency in times of crisis.

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Appendix

Table A1: Scope of Business Activity Diversification

Activity	Year	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Securities	2000	Unrestricted	Restricted	Unrestricted	Restricted	Unrestricted	n.a.	Unrestricted
	2003	n.a.	Permitted	Permitted	n.a.	n.a.	Permitted	Permitted
	2007	Unrestricted	Permitted	Permitted	Unrestricted	n.a.	Restricted	Unrestricted
	2011	Permitted	Permitted	Restricted	Prohibited	Permitted	Permitted	Permitted
	2017	Permitted	Restricted	Permitted	Unrestricted	Restricted	Permitted	Unrestricted
Insurance	2000	Prohibited	Prohibited	Prohibited	Permitted	Prohibited	n.a.	Unrestricted
	2003	n.a.	Prohibited	Restricted	n.a.	n.a.	Restricted	Restricted
	2007	Prohibited	Prohibited	Permitted	Prohibited	n.a.	Restricted	Prohibited
	2011	Prohibited	Prohibited	permitted	Restricted	Restricted	Restricted	Permitted
	2017	Prohibited	prohibited	Permitted	Unrestricted	Restricted	Restricted	Restricted
Real Estate	2000	Prohibited	Prohibited	Prohibited	Prohibited	Permitted	n.a.	Permitted
	2003	n.a.	Restricted	Prohibited	n.a.	n.a.	Prohibited	Prohibited
	2007	Prohibited	Restricted	Prohibited	Prohibited	n.a.	Prohibited	Prohibited
	2011	Prohibited	Unrestricted	Prohibited	Unrestricted	Prohibited	Restricted	Permitted
	2017	Prohibited	prohibited	prohibited	Prohibited	Restricted	Restricted	Prohibited

Source: Authors' Elaborations
Note: n.a., implies "not available" and the country has not answered the question.

Table A2: Conglomeration Restrictiveness

Domain	Year	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
(i) A bank owning a non-financial firm	2000	Restricted	Restricted	Unrestricted	Unrestricted	Restricted	n.a.	Restricted
	2003	n.a.	Restricted	Restricted	n.a.	n.a	Restricted	Restricted
	2007	Prohibited	Restricted	Restricted	Prohibited	n.a.	Restricted	na
	2011	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Restricted	Permitted
	2017	Prohibited	Prohibited	Prohibited	Unrestricted	Prohibited	Prohibited	Restricted
(ii) A non-financial firm owning a bank	2000	Restricted	Restricted	Restricted	Prohibited	Permitted	n.a.	Restricted
	2003	n.a.	Restricted	Restricted	n.a.	n.a	Permitted	Restricted
	2007	Restricted	Restricted	Restricted	Permitted	n.a.	Restricted	Restricted
	2011	n.a.	Restricted	Restricted	Permitted	n.a.	Permitted	Unrestricted
	2017	Restricted	Restricted	Restricted	Permitted	Restricted	Permitted	Restricted
(iii) A non-bank firm owning a bank	2000	n.a.	n.a.	Restricted	n.a.	Unrestricted	n.a.	n.a.
	2003	n.a.	Restricted	Restricted	n.a.	n.a	Permitted	Restricted
	2007	Prohibited	Restricted	Restricted	Unrestricted	n.a.	Restricted	Restricted
	2011	n.a.	Restricted	Restricted	Permitted	n.a.	Permitted	Unrestricted
	2017	Prohibited	Prohibited	Prohibited	Prohibited	Restricted	Restricted	Prohibited

Source: Authors' Elaborations
Note: n.a., implies "not available" and the country has not answered the question.

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All communications should be addressed to:

Research, Development & Consultancy (R.D.&C.) Wing
Bangladesh Institute of Bank Management (BIBM)
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Publications-Cum-Public Relations (PPR) Department
Bangladesh Institute of Bank Management (BIBM)
Plot-4, Main Road-1 (South), Mirpur-2, Dhaka-1216, Bangladesh
PABX: 48032091-4; 48032097-8, 48032104 (Ext. 120)
Email: ppr@bibm.org.bd
almamun@bibm.org.bd

Support Team ***Research, Development and Consultancy Wing***
Papon Tabassum, *Research Officer, BIBM*
Sk. Md. Azizur Rahman, *Research Assistant, BIBM*
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Published in July, 2023

Published by Bangladesh Institute of Bank Management (BIBM)
Plot No. 4, Main Road No. 1 (South), Section No. 2
Mirpur, Dhaka-1216, Bangladesh.
PABX : 48032091-4, 48032097-8, 48032104
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Printed by .....

ISSN 1019-7044

Price: BDT 400.00
USD 20.00

Published by the Bangladesh Institute of Bank Management (BIBM)
Main Road No. 1 (South), Section-2, Mirpur, Dhaka-1216, Bangladesh.