

THE EFFECTS OF MERGER ON BANK PROFITABILITY:
EVIDENCE FROM NEPAL

A Research dissertation submitted to
Kathmandu University School of Management
in partial fulfilment of the requirement for the
Degree of Master of Philosophy (MPhil) in Management

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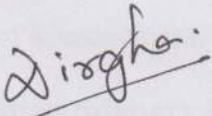
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October, 2018

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DECLARATION

I hereby declare that this dissertation entitled *The Effects of Merger on Bank Profitability: Evidence from Nepal* embodies the result of an original research work I carried out in partial fulfillment of the requirements for the degree of Master of Philosophy (MPhil) in Management of the Kathmandu University and that this dissertation has not been submitted for candidature for any other degree.



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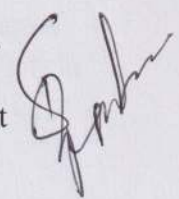
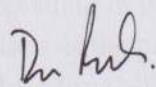
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We have conducted the viva-voce examination of the dissertation *The Effects of Merger on Bank Profitability: Evidence from Nepal* by Dirgha Bahadur Rawal and found the dissertation to be original work of the candidate and written according to the prescribed format of the School of Management. We approve the dissertation as the partial fulfillment of the requirements for the degree of Master of Philosophy (MPhil) in Management.

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ABSTRACT

The empirical research examined the effects of bank merger in the Profitability of banks and financial institutions in Nepal. After a heavy consolidation in the banking sector, the effect of merger on bank profitability does not seem to be assessed quantitatively. This study examines a large panel of entire banking system (more than 200 banks and financial institutions) from Nepal to study the effects of merger on bank Profitability based on the data between July 2009 and July 2018, a period of heavy bank consolidation.

Utilizing dynamic panel data GMM-system estimator on financial statement of banks and financial institutions in Nepal across 10 years ranging from 2009-2018, this study shows evidence of no significant effects of merger on bank profitability (RoE and RoA). Results of GMM estimator suggest negative and significant effect of Capital increment policy; Interest spread policy and Capital to Assets Ratio with profitability. Conversely, positive and significant effects of banking sector development and Net interest income to total loan have been found with profitability. These results have significant practical and research implications as discussed in the report.

Key Words: merger and acquisition, bank profitability, return on equity, return on assets, banks and financial institutions, generalized methods of moments (GMM)

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LIST OF ABBREVIATIONS

BAFIA	Banks and Financial Institutions Act
BFI	Banks and Financial Institutions
CPMPA	Competition Promotion and Market Protection Act
DDA	Due Diligence Audit
ECB	European Central Bank
GLS	Generalized Least Square
GMM	Generalized Methods of Moments
IMF	International Monetary Fund
KUSOM	Kathmandu University School of Management
LOI	letter of intent
MoF	Ministry of Finance
NBFI	Non bank financial institutions
NRB	Nepal Rastra Bank
OLS	Ordinary Least Square
RoA	Return on Assets
RoE	Return on Equity
VIF	Variance Inflation Factor

CHAPTER I

INTRODUCTION

Background of the Study

Main objective of a business is to achieve profitability and growth. Businesses have to face several challenges like; limited resources, inadequate market, small size of the business, competition and efficiency while achieving the goals of profitability and growth. Despite these challenges, business firms have various options for profitability and growth. Organic and inorganic growth strategies are the mostly used strategies for improving growth and expansion of business (Rashid, 2017). Organic growth strategy encourages firms to expand their business by new product development, productivity enhancement, increased output, cost reduction, finding new markets, and expansion of customer base. On the other hand, the inorganic growth is achieved through mergers and acquisitions, divestitures, spin-offs, take-over etc. Among the strategies of inorganic growth, merger and acquisition (M&A) is one of the important characteristics of this strategy.

Merger and Acquisition is taken as a corporate strategy enabling a firm to strengthen its core competencies. Theoretically, synergy gain is expected from the consolidation of two or more than two banks. Synergy is a situation when two (or more) businesses in combination can create greater value than each of them are operated separately (DePamphilis, 2011). Such synergy can be operating or financial. Operating synergy may be both economies of scale and economies of scope, which can be important determinants of shareholder wealth creation. Financial synergy is related with the cost of capital in the business. It is argued that net positive gain is achieved out of the merger and acquisition of two separate entities. A merged entity

can achieve an outcome more than the sum of outcome of individual entities before merger (Adhikari, 2014). Other arguments in favor of merger and acquisition are; revenue maximization, cost reduction, tax gain and other regulatory incentives offered by the regulatory authorities.

A merger is a corporate strategy where two or more than two companies are combined to become one company. Generally, merger and consolidation are used synonymously, but they have some kind of differences in process (Gupta, 2015). Legally, two or more than two entities become one legal entity after merger or acquisition. Organizations can combine with each other in a number of ways. The most common approaches are Mergers and Acquisitions (M&As), which combine independent firms under common control, and joint ventures and strategic alliances, which enhance inter-firm cooperation without combining separate entities (G-10, 2001).

According to Bohlin, Daley, and Thomson (2000), there are various motives for merger and acquisitions like; creating and exploiting synergies (the primary motivation), to increase market share, to protect markets by weakening or eliminating rivals, to acquire products and/or technologies, to strengthen the core business by expanding in areas of greatest competence, to gain footholds in other countries or continents, to achieve critical mass or competitive size. Different studies explain the primary reasons behind bank merger activity pertain to (1) creating economies of scale, (2) expanding geographical network, (3) increasing the combined capital base size and product offerings, and (4) gaining market power. Motives may vary with firm characteristics such as size or organizational structure, over time, across countries, across industry segments, or even across lines of business within a segment (BIS, 2001).

The terms merger and consolidation are generally used synonymously. However, the two might have different legal identities depending on the context. In a consolidation, two firms come together to create an entirely new firm. Both the acquiring firm and the acquired firm dissolve their previous names and identity (Ross et al., 2003, as cited in Adhikari, 2014). In practice, a merger between company A + company B = company A, where company B merged with company A. In a consolidation, company A + company B = company C, where company C is an entirely new company (Gaughan, 2011, as cited in Adhikari, 2014). Similarly, in acquisition one company gains control of the management and assets of another company by purchasing assets or shares.

Various literatures suggest several objectives of merger. The ultimate objective of the M&As may be to increase shareholder's value. Merger creates synergy through the exploitation of the possibilities arising from the merger viz. economies of scope, economics of scale, by capturing the new market segment through new product, new brand etc.

In Nepal, after the financial sector liberalization, a large number of financial institutions came into operation. Formal financial sector development was begun with the establishment of Nepal Bank Limited on 30 Kartik 1994 (B.S.). For a long period of time, the development process was based on the state led efforts; there were four banks and financial institution owned by the Government of Nepal. After mid-eighties, process of financial sector liberalization was initiated with the entry of foreign joint venture banks and private participation in the banking sector. After the liberalization of the banking sector, the number of banks and financial institution had grown significantly.

The Bank and Financial Institutions Act (BAFIA, 2006) classified Nepalese banks and financial institutions into four categories viz; commercial banks, development banks, finance companies and micro-finance development banks. In addition to those four categories, NRB has allowed some co-operatives and financial intermediaries NGOs to carry out limited banking transactions.

During the last three decades, Nepalese financial sector has grown at a very rapid pace. By the end of mid – July 2016, altogether 219 banks and non- bank financial institutions (licensed by NRB) were in operation. As presented below, number grows rapidly and reached to 28 “A” class commercial banks, 67 “B” class development banks, 42 “C” class finance companies, 42 “D” class micro-credit development banks, 15 saving and credit co-operatives and 25 NGOs in mid July 2018. Development of number of banks and financial institutions in Nepal is shown in the table below:

Table 1.1

Growth of Number of Banks and Financial Institutions in Nepal (Mid July)

Class	1985	1990	1995	2000	2005	2010	2015	2018
A. Commercial Banks	3	5	10	13	17	27	30	28
B. Development Banks	2	2	3	7	26	79	76	33
C. Finance Companies			21	45	60	79	48	25
D. Micro Finance Development Banks			4	7	11	18	38	65
Total	5	7	38	72	114	203	192	151

Source: (NRB, 2018)

Above table shows the total number of banks and financial institutions licensed by NRB was 5 in 1985 and the number reached to 219 in mid July 2016. The number of commercial banks was 3 in 1985 and it reached to 28 in mid July 2016. The number of banks and financial institution is gradually decreasing after 2010.

Merger and acquisition of the banks and financial institutions after merger policy initiated by NRB is attributed to such decrease in the number of institutions.

After the financial sector liberalization, a large number of financial institutions came into operation. A qualitative development of banking and financial services was achieved at expected level despite a significant numerical growth of Banks and financial institutions (NRB). Licensing of new banks and financial institutions was stopped and kept under moratorium (Since 066/04/15). Merger of a banks and financial institutions (BFI) was considered to be inevitable for the development of safe and sound financial system.

Monetary Policy of Fiscal year 2005/06 announced, "The NRB strongly feels the need to streamline and simplify the existing process of merger and acquisition such that Nepal's banks and NBFIs get transformed into vibrant and resilient intermediaries by means of mergers and acquisition. In this direction, this bank will initiate the review of existing legal framework (NRB, 2005, p.16). With the announcement of the importance of merger, Nepalese financial sector has moved towards the path of consolidation. After the NRB's announcement, the government also supported the steps with announcement of fiscal incentives through government budget.

Budget speech 2010/11 announced, "In order to encourage the merger of banks, and finance and insurance companies, changes in the provision of taxing assets and liabilities as disposal after merger will be introduced to make non-taxable and arrangement have been made in the context of shareholders, employees and managers" (Ministry of Finance [MoF], 2010, p.22).

These policy initiatives taken by the Central Bank and Government of Nepal were appreciated by the international agencies like International Monetary Fund

(IMF). Article IV Consultation Staff Report urged NRB to focus on bank consolidation. Article IV Consultation Staff Report (IMF 2010) recommended in line with the previous recommendation as, “Bank licensing policy needs to be tightened, banking sector consolidation incentivized, and state-controlled bank reform tackled”. The licensing moratorium should be maintained and more stringent fit and proper criteria adopted. Consolidation should be encouraged, including by raising minimum paid up capital requirements and facilitating the trading of promoter shares. The authorities need to proceed with reforms and recapitalization of the state-controlled banks with losses absorbed by existing shareholders (International Monetary Fund [IMF], 2010, p.4).

NRB formulated and implemented merger bylaws, 2011 to initiate the process of consolidation of licensed institutions by NRB. Before implementation of the bylaws, few banks and financial institutions were already merged voluntarily. Some BFIs which are promoted by same promoter groups were merged voluntarily. Laxmi Bank Ltd and HISEF finance co. ltd, Nepal Bangladesh bank, Nepal Bangladesh Finance and Nepal Srilanka Merchant Finance, National and Narayani Finance Ltd, Hiuchuli Bikash Bank and Birgunj Finance ltd were merged before NRB initiatives for merger and acquisition.

After the implementation of Merger Bylaws, a large number of banks and financial institutions have been merged till date. By the end of mid July 2018, total number of 162 banks and financial institutions participated in the merger process to become 41 banks and financial institutions.

Statement of the Problem

Bank merger is considered to be an important strategy to improve the performance of banking system. According to Ravichandran et al. (2010) same

strategy had been adopted by RBI in 1960 while 45 banks were pushed into mergers a several private banks were found to be operating on a very low capital and distressed situation. Merger and Acquisition is one of the major strategies for the growth of banks and financial institutions. Basu et al. (2004) examine a large panel of more than 100 banks from Argentina to study the effects of bank consolidation on performance. Their study found a positive and significant effect of bank consolidation on bank performance. Various arguments have been made with regard to the effects of bank merger on bank performance. On the one hand, it is argued that consolidation could potentially increase bank returns, through revenue and cost efficiency gains, and that consolidation may reduce industry risks through the elimination of weak banks and better diversification opportunities open to the remaining larger banks (Berger, 2000). Berger further, on the other, it has also been argued that consolidation could increase the banks' propensity toward risk taking through increases in leverage and off-balance sheet operations. Moreover, some studies (Shaffer, 1993; Akhavein, Berger, & Humphrey, 1997) find that mergers can potentially lower costs and increase profit efficiency, while other papers (Berger & Humphrey, 1992; Rhoades, 1993) finds that mergers have not resulted in any significant post merger improvements in performance.

Paudel (2012) conducted a research study on this topic applying a triangulation approach by using different sources of information i.e. both primary and secondary. The study has focused on the analysis of merger motives and process, institutional arrangements and view, perception and prospects of authorities and employees regarding the merger of BFIs. Since, the study was done during the beginning of merger process in Nepal; the study has emphasized the importance of

merger in Nepal. The study has made recommendation on improvements of merger process as well as conducting extensive research in this area.

Adhikari (2014) has emphasized merger and acquisition as an indispensable tool for strengthening Nepalese banking and financial institutions. The author has recommended future researchers to adopt better research techniques and method and cover more merged banks into consideration since this research has been conducted only in few merged BFIs.

Bank performance is a basis of growth of the financial sector. Theoretically, merger is expected to improve performance in terms of profitability by reducing costs or by increasing revenues. Liargovas and Repousis (2010) found there is no improvement in operating performance following mergers and the overall results indicated that bank mergers and acquisitions had no impact on performance of the bank. Cornett and Tehranian (1992) presented evidence for increase in post-merger operating performance. But the studies of Berger and Humphrey (1992); Berger and DeYoung (1997) do not find any evidence in post-merger operating performance. Several arguments have been made for the effects of merger on bank performance. Some argues that merger increases bank returns, through revenue and cost efficiency gains, and that consolidation may reduce industry risks through the elimination of weak banks and better diversification opportunities (Berger, 1997). Other argues that consolidation could increase the banks' propensity toward risk taking through increases in leverage and off-balance sheet operations (Berger, 1997).

Number of banks and financial institutions were increased in a rapid pace during the last three decades. Large numbers of small financial institutions were facing various types of problems like capital deficiency, liquidity problem, poor assets quality and weaknesses in risk management & corporate governance (NRB,2015).

Article IV, report alarmed that Systemic risks in the financial sector were coming to a head due to lax lending standards and reportedly prevalent ever-greening, tighter liquidity, high interest rates, and a standstill in real estate transactions will likely lead to rising loan defaults (IMF, 2010 p.14). Such problems would ignite several problems ultimately developing a loss of the public confidence towards the banking system as a whole. In this regard, to restore the public confidence in the financial system and thus to avoid the losses to depositors, merger was considered one of the alternatives for financial sector consolidation.

The practice of merger is a comparatively new concept and very few literatures, researches that have analyzed the effect of merger on banks and financial institutions in the context of Nepal (Adhikari, 2014). Policymakers and Regulators of the banking sectors are giving more importance to the bank merger in the hope of improving financial Profitability of banks but the international studies on this subject have produced mixed results. Some studies have evidenced that merger brings positive results in the performance whereas other studies have not found any meaningful improvement in performance as a result of a merger. In the context of Nepal, there seems to be an ambiguity with regards to the effects of merger on bank performance.

This paper aims to shed light on the effects of the merger policy initiated by the central of bank Nepal on Profitability of banks and financial institutions of Nepal. For this purpose, this study has tried to analyze the effects of merger on Profitability of banks and financial institutions using large data set of entire banking system of Nepal. The research question of this study is:

What are the effects of bank merger on Profitability of banks and financial institutions?

Research Gap

Nepalese banking sector has grown rapidly during the last three decades (NRB 2015). In addition, globalization and technological innovation have increased the growth and development of this sector. As number of banks and financial institution grows, a notion of cutthroat competition could be observed in the financial market. In such scenario, merger and acquisition is becoming an important phenomenon for the consolidation of the financial market. Globally, merger and acquisition is much discussed and researched topic. But this topic has received least attention in our context, despite the need (Adhikari, 2014).

Review of the literatures show that the research on merger and acquisition of banks and financial institutions is very limited in our context. Moreover, academic research and literature on this area seems to be very limited and too fragmented to provide a comprehensive and detail explanation. Globally, there is a large body of literature on the subject, but still we know very little about effects of merger in our context (Paudel, 2012). There are very few studies, almost all of them have analyzed mergers processes qualitatively and based on some case studies. Detailed quantitative assessment of merger process remain to be unexplored despite its importance.

In this scenario, there is a need of new research and studies to explore the reality, to solve the problems and eliminate their sources. Therefore, this study tries to fill above research gaps by investigating the effects of bank merger on bank performance using annual financial statements of banks and financial institutions of Nepal.

Methodologically, this research is unique as it considers entire Nepalese banking system as a sample for the period of heavy bank consolidation.

Significance of the Study

Bank merger and consolidation has been a widespread phenomenon in the banking sector in the recent years. Large number of banking banks and financial institutions has been merger and the number of BFIs has been declined significantly in many countries. Similarly, a large number of banks and financial institutions merged in Nepal in a very short period of time. So, in this background, there is a need to identify the effect of merger on profitability of banks and financial institutions in Nepal. This study has contributed to the growing literature of bank merger in economic and finance area in at least three ways. First, in Nepal empirical analysis of bank merger seems to be very rare. Second, this study has constructed finer measure of bank profitability taking entire banking system rather than studying only a small part of it. Third, this study is expected to be useful for bankers, policy makers, financial planners and economists of both developing and developed countries to deal with bank merger and consolidation. Similarly, academic researchers can frame some of the sharp areas for further study.

Research Objectives

In finance literature, there are a large number of studies elaborating the principles, practices and implications of the bank merger. But the research studies are lacking in the performance of banks and financial institutions in the context of Nepal (Pathak, 2016). International evidences show mixed types of effects of bank mergers on the profitability. A large number of banks and financial institutions are merged in Nepal. The effects of such a great event are not yet assessed in detail. There is a lack of clarity whether the merger has positive or negative effects on the profitability of banks and financial institutions. To address the issues discussed in the statement of

problem as well as to answer the research question, this research was planned to carry out the study with a following objective:

“To assess the effects of merger on the profitability of banks and financial institutions.”

A large number of studies have been conducted globally in the field of merger and acquisition of banks. But in Nepal, few studies are carried out in this field (Pathak, 2016). This study has tried to synthesize the theories, global practices, legal and regulatory provisions and profitability of the banks and financial institutions before and after the process of merger and acquisition in Nepal. Furthermore, this study has analyzed the profitability of banks and financial institution to evaluate the process of merger and acquisition to some extent. It is expected that the study fills the gap of a research which remains unexplored despite a long experience of merger and acquisitions of banks and financial institutions in Nepal.

Organization of the Report

This research is organized in five chapters. The first chapter includes background, objective of the study, and statement of problem research gap and significance of the study. Chapter two includes the literature review on effects of bank merger and consolidation. It also incorporates related theories, the findings of the previous researcher and different perspectives proposed by various scholars. Chapter three presents details of the research methodology. It includes detailed description of research design, secondary data, sample and variables for the study. Chapter four deals with the result and findings obtained from the data analysis of the study.

Finally, the study concludes with chapter five which includes summary of the findings and discussions, implication of the research and limitations of the study. A reference list and appendices have been kept at the end of this dissertation.

CHAPTER II

REVIEW OF LITERATURE

This chapter presents the theoretical concepts, empirical review of previous studies and theoretical framework. This helps to understand and investigate the research problem. The chapter begins with the key concepts that have been used in this study. It examines the various concepts and theories that have been put forwards. Then moves to empirical literature in which relevant empirical work of authors have been reviewed for this study. A large number of research works are available in context to Merger and Acquisition. For the purpose of this study, a brief review of various studies has been done to understand and investigate the areas of merger, its impact on the financial profitability of and then research problem is formulated for further investigation in this area. At the end of this chapter, conceptual framework is presented in which research idea is organized for achieving research objectives.

Merger & Acquisition

Mergers and Acquisitions (M&A) is a widely used process for corporate restructuring that has gained substantial prominence in both developed and developing nations (Khan, 2011). Reviewing published literature in the area of M&As gives a deeper insight on merger and acquisitions. Mergers occur when two businesses combine into one. A merger can be defined as combination of two companies into one by either closing the old entities into one new entity or by one company absorbing the other. In other words, in Merger and and Acquisition, two or more companies are consolidated into one company. The small or less profit oriented organizations have no option than either to quit from the market or merged with or acquired by larger business firms (Haider et al., 2014). Merger and acquisition are two

different terms often used interchangeably (Khurana & Warne, 2014) defines that two or more than two organizations unite to become one organization in merger. On the other hand, one organization purchases a part or whole another organization in acquisition (Meschi, 2000). Various forms of mergers and acquisitions are takeovers, corporate restructuring, or corporate control that changes in ownership structure of firms. Mergers and acquisitions are becoming easier option for small or less profit making organizations to stay and survive in the emerging market. Therefore, M&A is considered to be a global business strategy that enables firms to enter into new potential markets or to a new business area (Goyal & Joshi, 2012).

Mergers can be classified as horizontal, vertical and conglomerate (Motis, 2007). Mergers are said to be horizontal merger when the two business entities are in direct competition and share the same product lines and markets. Bank merger is an example of horizontal merger. A horizontal merger decreases competition in the market. Mergers are regarded as vertical when one is a customer of another. In another words, a vertical merger occurs between companies where one buys or sells something from or to the other. Vertical Merger is a merger between companies in the same industry, but at different stages of production process. Finally, mergers are considered to be conglomerate merger when firms are in different markets and/or do not have business lines in common.

Mergers and acquisitions (M&As) are most widely used strategy by firms to strengthen and maintain their position in the market place (Goyal & Joshi, 2012). Merger and acquisition is a world-wide phenomenon for the consolidation of business entities. The need for growth is a major driving force behind mergers and acquisitions (Gupta, 2015). M&As are considered to be a faster and efficient way to expand the business into new markets and incorporate new technologies. An entrepreneur may

grow its business either by internal expansion or by external expansion. When a firm grows gradually over time with the normal course of the business then it is known as internal expansion, through acquisition of new assets, replacement of the technologically obsolete equipments and the establishment of new lines of products. But when a firm acquires a running business and grows immediately through corporate combinations then it is known as external expansion. These combinations are in the form of mergers, acquisitions, amalgamations and takeovers and have now become important features of corporate restructuring (Sharma & Malhotra, 2013). Nowadays, mergers and acquisitions (M&A) are being increasingly used globally, for improving competitiveness of companies through gaining greater market share, broadening the portfolio to reduce business risk, for entering new markets and geographies, and capitalizing on economies of scale etc. (Mantravadi & Reddy, 2008).

Berger et al. (1993) presents the importance of merger as, historically, there are three ways that U.S. banks are expanded. First, they have grown because their local markets have grown by increasing regular business of deposit and loan services. Second, was through branch expansion in new geographical region. Third, and most important, banks had grown by merging with or acquiring other banking entities. Berger claims that the most important source of growth in the U.S. has been through mergers and acquisitions.

DePamphilis (2011) discussed about the historical development of merger and merger waves. There evolution of the merger has been studied under six waves beginning from the 1890 in the US. DePamphilis argues that merge waves occur when firms in industries react to “shocks” in their operating environments such as from deregulation; the emergence of new technologies, distribution channels, or substitute

products; or a sustained rising commodity price. DePamphilis elaborates the merger waves as;

First Wave (1897–1904) was known as a drive for efficiency, lax enforcement of the Sherman Antitrust Act, westward migration, and technological change. Mergers during this period were largely horizontal and resulted in increased concentration in primary metals, transportation, and mining. Large companies absorbed small ones.

Second Wave (1916–1929) was a result of the entry of the United States into World War I and the post war economic boom. Mergers also tended to be horizontal and further increased industry concentration.

Third Wave (1965–1969) of the merger was identified as the Conglomerate Era. This period of M&A activity was characterized by the emergence of financial engineering and conglomeration.

Fourth Wave (1981–1989) is known as the Retrenchment Era. The 1980s, a decade that saw the rise of the corporate raider, were characterized by the breakup of many major conglomerates and a proliferation of financial buyers using the hostile takeover and the leveraged buyout (LBO) as their primary acquisition strategies.

Fifth Wave (1992–2000) was the Age of the Strategic Mega-Merger. Pace of the M&A activity did not slow down during the recession of 1990. The number of transaction as well as the volume was increased during the period.

Sixth Wave (2003–2007) of merger was characterized by an explosion of highly leveraged buyouts and private equity investments. In US there was a rapid development of complex securities collateralized by pools of debt and loan obligations of varying levels of risk. Merger financing involved the use of mortgage-backed security issues and took the form of syndicated debt (i.e., debt purchased by underwriters for resale to the investing public).

Why Merger and Acquisition?

DePamphilis (2011) has explained the theories and the motivation of the merger. According to DePamphilis, Operating Synergy, financial synergy, diversification, market power, agency problem, tax consideration are the major theories and motivation for the Merger and Acquisition. Following table shows the theories and motivation behind the merger and acquisition:

Table 2.1

Common Theories of What Causes Mergers and Acquisitions

Theory	Motivation
Operating Synergy Economies of Scale Economies of Scope	Improve operating efficiency through economies of scale or scope by acquiring a customer, supplier, or competitor
Financial Synergy	Lower cost of capital
Diversification New Products/Current Markets New Products/New Markets Current Products/New Markets	Position the firm in higher growth products or markets
Strategic Realignment Technological Change Regulatory and Political Change Hubris (Managerial Pride)	Acquire capabilities to adapt more rapidly to environmental changes than could be achieved if they were developed internally Acquirers believe their valuation of target more accurate than the market's, causing them to overpay by overestimating synergy
Buying Undervalued Assets (Q-Ratio)	Acquire assets more cheaply when the equity of existing companies is less than the cost of buying or building the assets
Mismanagement (Agency Problems)	Replace managers not acting in the best interests of the owners
Managerialism	Increase the size of a company to increase the power and pay of managers
Tax Considerations	Obtain unused net operating losses and tax credits, asset write-ups, and substitute capital gains for ordinary income
Market Power	Increase market share to improve ability to set prices above competitive levels
Misvaluation	Investor overvaluation of acquirer's stock encourages M&As

Source: (DePamphilis, 2011)

There are several reasons for merger and acquisition of firm, companies and businesses. Theoretically, companies are merged or acquired if it creates value. Synergy gain can be expected from the merger and acquisition. Synergies may be of three types: operating, financial, or managerial. Operating Synergies is achieved from the combination of the acquirer and target's operations. A first type of operating synergies is revenue enhancement. Financial Synergies are the result of the lower financing costs. Large institutions can have access to a wider and cheaper pool of resources than the small entities. One benefit can be expected through diversifying unrelated businesses which enables companies to reduce risk and, therefore, increase their debt capacity and lower their before tax cost of financing. Managerial Synergies can be achieved by replacing high-performing management team with the poor-performing one.

Over the last decade, the international banking industry, particularly in emerging market economies, has undergone substantial structural changes (Basu et al., 2004). Particularly noticeable is the tendency toward consolidation. There seems to be a large reduction in the number of banks and other deposit taking institutions with a simultaneous increase in size and concentration of the remaining entities in the sector. International experience shows that bank consolidation accelerated during the last three years of the 1990s and most importantly the largest number of mergers and acquisitions in this sector occurred within national borders. It started in the US, but in the second half of the 1990s, it was followed by Europe and Japan. Gupta (2015) asserts that the waves of mergers and acquisition started in United States and Europe and had then spread to other countries around the world.

Merger and acquisition is not a new phenomenon in the international context but the practice is new for the Nepalese Banking Sector (Pathak, 2016). The Nepalese

banking sector has undergone rapid consolidation during the last one decade. Since, the merger is still a new practice, the issues regarding the merger and acquisitions are remained unclear yet.

Mergers and Nepalese Banking

Prior to 1984, there were only two commercial banks and two development banks (NRB, 2018) in Nepal. All of them were owned by the government. After mid 1980s, with initiation of the government's liberal economic policy, foreign joint venture banks and private commercial banks came into operation. Number of banks and financial institution started to grow tremendously. Banks and Financial Institutions act came into effect as an Umbrella act. This Act categorized all the banking institutions under the following four categories: Class 'A' – Commercial Banks; Class 'B' – Development Banks; Class 'C' – Finance Companies; and Class 'D' – Microfinance Development Banks. Within a very short period of time, large number of banks and financial institutions opened in Nepal. As on mid July 2011, there were altogether 272 banks and financial institutions into operation. The number of commercial banks reached to 32 at its highest level. Similarly, Development Banks and Finance Companies also reached to 88 and 79 respectively to their highest number.

After the financial sector liberalization, a large number of financial institutions came into operation. Qualitative development of banking and financial services was remained unachieved despite a significant numerical growth of Banks and financial institutions. Licensing of new banks and financial institutions was stopped and kept under moratorium (066/04/15). Merger and acquisition of banks and financial institutions (BFI) was assumed to be inevitable for the development of safe and sound financial system(NRB, 2011).

Monetary Policy of Fiscal year 2005/06 announced, “The NRB strongly feels the need to streamline and simplify the existing process of merger and acquisition such that Nepal's banks and NBFIs get transformed into vibrant and resilient intermediaries by means of mergers and acquisition. In this direction, this bank will initiate the review of existing legal framework.” With the announcement of the importance of merger, Nepalese financial sector moved towards the path of consolidation. After the Central bank's announcement, the government also supported the steps with announcement fiscal incentives through government budget.

Budget speech 2067/68 announced, “In order to encourage the merger of banks, and finance and insurance companies, changes in the provision of taxing assets and liabilities as disposal after merger will be introduced to make non-taxable and arrangement have been made in the context of shareholders, employees and managers”.

These policy initiations taken by the Central Bank and Government of Nepal were appreciated by the international agencies like International Monetary Fund (IMF). Article IV Consultation Staff Report (IMF, 2008) emphasized NRB to focus on bank consolidation. Article IV Consultation Staff Report (IMF, 2010) recommended in line with the previous recommendation as, “Bank licensing policy needs to be tightened, banking sector consolidation incentivized, and state-controlled bank reform tackled. The licensing moratorium should be maintained and more stringent fit and proper criteria adopted. Consolidation should be encouraged, including by raising minimum paid up capital requirements and facilitating the trading of promoter shares. The authorities need to proceed with reforms and recapitalization of the state-controlled banks with losses absorbed by existing shareholders.”

History of merger in Nepal dates back to 2004, the first merger between a commercial bank (Laxmi Bank Limited) and finance company (HISEF Finance Company Limited) was a voluntary merger done by the same group of investors. After the first merger, very few mergers were observed until 2011/12. Indeed, there was the favorable outcome of the newly issued Merger Bylaw in 2011, the process of mergers of 'A', 'B' and 'C' class institutions was adopted to consolidate the banking sector and enhance its trustworthiness among the general public (NRB 2018).

Mergers and acquisitions (M&A) among BFIs increased rapidly after 2010. Government and NRB have been facilitating the process through policy provisions and concessions for M&A. Because of the deliberate effort made by NRB for the past six years (2010/11-2015/16), Nepalese financial sector saw the number of BFIs reduced by more than 140 with significant decrease in the number of BFIs.

Merger and Acquisitions: Legislations and Regulations

Legislations

There is no separate merger specific law governing merger and acquisition in Nepal. Since banks and financial institutions are incorporated under Companies Act, 2063, Section 177 of the Companies Act, 2063 is applicable to the merger of any company including banks and financial institutions. According to this act, a public company may, by adopting a special resolution in its general meeting to that effect, be merged with another company (private or public) and shall stand as a public company after merger.

BAFIA (2016) has some provision regarding merger of banks and financial institutions in the clause 69, 70, 71 and 72. If any licensed institution wishes to be merged with or merging another licensed institution, both the merging and merged licensed institutions shall adopt a special resolution to that effect in their respective

general meetings and make a joint application. As per the law, Banks and financial institutions apply NRB for the approval of merger or acquisitions.

NRB act, 2058 has also some provision relating to the merger of banks and financial institutions. Under section 86, NRB has legal right to merge problematic BFIs with other BFIs. The Income Tax Act, 2058 has given some relaxation in case of disposal (sale or transfer) of property and liability upon merger, acquisition or amalgamation. Moreover, the act has given some tax rebates for encouraging merger and acquisitions. As per the act, the shareholders existing in the entity when dispose their shares by sale within two years after the merger, no capital gain tax shall be charged on the profits made on the shares so disposed. Similarly, tax is exempted on the dividends distributed by the entity that has been disposed upon being merged to the shareholders existing at the time of merger within two years after the date of merger.

Competition Promotion and Market Protection Act (CPMPA), 2063 has prohibited the merger or amalgamation with an intent to control competition. According to the Act, where a merger, amalgamation, share purchase or takeover of persons or enterprises that produce or distribute any goods or services of a similar nature results in more than forty percent of the total production or distribution of such goods or services within the State of Nepal, then it shall be deemed to have been made with intent to control competition.

Regulations: NRB Merger Bylaws, 2011

NRB has formulated and implemented a merger bylaw, 2011 which prescribed the process of consolidation of licensed institutions by NRB. The bylaws require BFIs to submit timeline and action plans along with the existing capital structure and the special resolution should be approved by the shareholders during the Annual General

Meeting (AGM) and instruction should be given to the BOD to carry out such activities related to the merger. On the basis of the resolution passed for merger along with the decisions of the BOD of both the organizations, a combined application for the merger should be submitted to the Nepal Rastra Bank. The bylaws have defined process for merger, letter of intent (LOI) from NRB, Due Diligence Audit (DDA), documents required and regulatory exemption and relaxations to incentivize mergers. Similarly, NRB has issued Acquisition bylaws to simplify the process of acquisition in Nepal.

Measurement and Determinants of Bank Performance

Whenever a merger or any acquisition is announced in any industry and in any geography of the world, the first question that comes to mind whether it the economists or industry specialist or the employees themselves – is how much is the financial gain? (Sharma & Malhotra, 2013). Profitability takes the first place while talking about the performance of any business. Recent events have shown that the most common measure for a bank's performance, i.e. Return on Equity (RoE), is only part of the story, as a good level of RoE may either reflect a good level of profitability or more limited equity capital (ECB, 2010). The capacity to generate sustainable profitability is used as a definition for describing banks' performance. Profitability is necessary for a bank to operate at a normal level, to obtain fair returns to its investors, to assure supervisors maintaining more resilient solvency ratios and to become resilient in the context of a riskier business environment. After global financial crisis of 2007-09, there was a view that profitability should not be the only measure of bank performance. But still, traditional performance measures are similar to those applied in other industries, with return on assets (RoA), return on equity (RoE) or cost-to-income ratio are the most widely used. RoE is an internal performance measure of

shareholder value, and it is by far the most popular measure of performance, since: (i) it proposes a direct assessment of the financial return of a shareholder's investment; (ii) it is easily available for analysts, only relying upon public information; and (iii) it allows for comparison between different companies or different sectors of the economy (ECB, 2010).

In the literature, bank profitability is usually determined by the internal and external determinants. The internal determinants originate from bank accounts (balance sheets and/or profit and loss accounts) and known as bank-specific determinants of profitability. The external determinants are variables beyond the control of bank management and related with the external environment that affects the operation and performance of financial institutions (Athanasoglou et al., 2008). The profitability is measured by the ratio of profits to assets, i.e. the return on assets (ROA) and the profits to equity ratio, i.e. the return on equity (ROE). In principle, ROA reflects the ability of a bank's management to generate profits from the bank's assets. ROE indicates the return to shareholders on their equity and also equals to ROA times the total assets-to-equity ratio.

The literature splits the factors that influence banks' profitability in different groups: bank-specific (internal) factors, industry specific and macroeconomic factors (Petria et al., 2015). Petria et al. further elaborates that the internal factors that influence profitability are: bank size, financial structure, credit risk taken, liquidity risk, business mix, income-expenditure structure and capital adequacy. An industry specific factor is the market concentration, while macroeconomic factors revealed by the literature are economic growth and inflation. Trujillo-Ponce (2013) studied the profitability determinants of Spanish banks over the period 1999–2009 and found that bank-specific variables, liquidity and deposit to liability ratio are important in

explaining the profitability. He also found that macro-economic variables (GDP growth) and industry-specific variable (HHI) have a positive impact on ROA and ROE. Similarly, Athanasoglou et al. (2008) studied the impact of bank-specific, industry-specific and macroeconomic variables on the profitability of Greek commercial banks over the period 1985–2001. They found that capitalization, credit quality and operating expenses are major determinants of bank profitability.

Review of Previous Empirical Studies

There are a large number of studies conducted investigating the effects of merger and acquisition. The findings of the studies are not similar to the theoretical assumptions of positive effects of the merger and acquisition.

Berger et al. (1993) examined the data on U.S. banks and their consolidation over the last decade and found, “ 1) that larger banks do not have lower average costs than middle size banks; 2) that larger banks do not experience scale economies as they grow larger; 3) that there is only limited potential for scope and product mix economies as banking firms merge; 4) that while mergers have the potential to improve cost X efficiency significantly, this potential is generally not realized, resulting in no significant merger cost efficiency gains on average; 5) that consultants’ claims of large cost efficiency improvements from mergers often refer to potential, rather than realized merger gains, and do not amount to substantial efficiency gains nor do they differ substantially from the findings of academic studies once they are expressed in terms of total cost ratios of the consolidated firm.”

Major issues discussed in the various studies are; post-merger profitability, operating expenses, and efficiency ratios relative to the pre-merger performance of the banks. As discussed in theoretical part, merger is expected to improve performance in terms of profitability by reducing costs or by increasing revenues. Cornett and

Tehrani (1992) presented evidence for increase in post-merger operating performance. However, the studies of Berger and Humphrey (1992), Pilloff (1996); Berger (1997) do not find any evidence in post-merger operating performance. Berger and Humphrey (1994) reported that most studies that examined pre-merger and post-merger financial ratios found no impact on operating cost and profit ratios. In the language of the Berger et al., financial ratios may be misleading indicators of performance because they do not control for product mix or input prices.

Recent studies have used frontier X-efficiency methods to determine the X-efficiency benefits of bank mergers. Most of the US based studies concluded that there is considerable potential for cost efficiency benefits from bank mergers (since there exists substantial X-inefficiency in the industry), "but the data show that on an average, such benefits were not realized by the US mergers of the 1980s" (Berger & Humphrey, 1994).

Some studies have also examined the potential benefits and scale economies of mergers. Boyd, Graham, and Hewitt (1993) explore potential diversification benefits to be had from banks merging with non banking financial service firms. Simulated mergers between US banks and non-bank financial service firms show that diversification of banks into insurance business and securities brokerage are optimal for reducing the probability of bankruptcy for bank holding companies. Wheelock and Wilson (2004) found that expected merger activity in US banking was positively related to management rating, bank size, competitive position and geographical location of banks and negatively related to market concentration. Substantial gains from mergers are expected to come from cost savings owing to economies of scale and scope. In a survey of US studies, Berger and Humphrey (1994) concluded that the consensus view of the recent scale economy literature is that the average cost curve

has a relatively flat U-shape with only small banks having the potential for scale efficiency gains and usually the measured economies are relatively small. Studies on scope economies found no evidence of these economies. Based on the literature, Berger and Humphrey (1994) conclude that "synergies in joint products in banking are rather small." The second issue identified above is the analysis of merger gains in terms of stock price performance of the bidder and target banks on announcement of merger.

A merger is expected to create value if the combined value of the bidder and target banks increases on the announcement of the merger. Pilloff and Santomero (1997) conducted a survey of the empirical evidence and reported that most studies fail to find a positive relationship between merger activity and gains in either performance or stockholder wealth. But Cornett and Tehranian (1992) reports a positive reaction in the stock prices of target banks and a negative reaction in the stock prices of bidding banks to merger announcements.

A study on mergers of Malaysian banks shows that, forced mergers have destroyed wealth of acquired banks (Chong et al., 2006). Again, the reasons for mixed evidence are many. A merger announcement also combines information on financing of the merger. If the merger is financed by equity offerings it may be interpreted as overvaluation of issuer. Hence, the negative announcement returns to bidding firm could be partly attributable to negative signaling unrelated to the value created by the merger. Returns to bidder firms' shareholders are significantly greater in bank mergers financed with cash than in mergers financed with stock (Houston et al.).

From the above analysis based on the arguments presented by seminal papers on merger shows that there are positive, negative and mixed types of effects of merger

on bank performance. Therefore, the literatures are reviewed by classifying the positive, negative and mixed effects of merger and acquisition as presented below:

Positive Effects of Merger and Acquisitions

Gugler, Mueller, Yurtoglu, and Zulehner (2003) analyzed the effects of mergers around the world over the past 15 years. They used a large panel of data on mergers to test several hypotheses about mergers. Their results showed that mergers on average do result in significant increases in profits, but reduce the sales of the merging firms. Study showed that the post merger patterns found to be similar across countries. Moreover, they did not find any dramatic differences between mergers in the manufacturing and the service sectors, and between domestic and cross-border mergers. To determine whether a merger has increased profits or not, they tried to predict the profits of the two merging firms in the absence of the merger. Predicting the scenario seems to be one of the most difficult aspects in the study.

Published study report on IMF working paper, Basu et al. (2004) examined a large panel (unbalanced) of more than 100 banks from Argentina to study the effects of bank consolidation on performance. They estimated the model using GLS methods taking Return on Equity (ROE) as dependent variable and banks specific and macroeconomic variable as explanatory variable. Their study found a positive and significant effect of bank consolidation on bank performance. Bank returns increase with consolidation, and insolvency risk is reduced. Their study suggested two different effects of merger and acquisition. The merger had a beneficial effect on bank returns while acquisition had a negative effect on return on equity.

Feroz et al. (2005) analyze the performance of a sample of merged firms over a ten year period using a managerially controlled efficiency measure, data envelopment analysis (DEA). Their individual firm level year by year analyses

indicated that the managerial performance of the merged firms generally improved in the post merger period as documented in the earlier corporate finance studies of merger and acquisitions. They studied an effect of mergers on the financial performance of US firms and the finding was managerial efficiency of 82% of the sampled firms improved in the post-merger periods. The study was more related with managerial efficiency part of the performance rather than effects on profitability aspects.

Vanitha and Selvan (2007) studied a sample of thirty percent from the total population i.e. 58 manufacturing companies which have undergone mergers and acquisitions during 2000, 2001 and 2002. The study evaluated the financial performance, ratio analysis, mean, standard deviation and 't' test as tools of analysis. The study found that in India merging companies were taken over by companies with reputed and good management. Findings show that the financial performances of acquiring firms were better than others. Methodologically, the study has used very simple before and after comparison of mean, standard deviation and 't' test, which may not give in-depth analysis of effects of merger.

Malaysia has a successful experience of reducing large number banks through force merger. In 2001, 52 of the 54 banking institutions had been merged into 10 banking groups. After the completion of the merger program the number of domestic banking institutions was significantly reduced to 10 domestic banking groups consisting of 10 commercial banks, 10 finance companies and nine merchant banks.

Sufian and Hubibullah (2009) examines the impact of mergers and acquisitions on the technical efficiency of the Malaysian banking sector using the Data Envelopment Analysis (DEA) and a series of parametric and nonparametric univariate tests. Study results show that Malaysian banks exhibited higher mean

technical efficiency levels compared to the premerger period. From economies of scale perspectives, the small Malaysian banks reap the benefits of economies of scale. The empirical findings from their study suggested that the merger program had resulted in a relatively more efficient Malaysian banking sector during the post-merger period.

Okpanachi (2011) used gross earnings, profit after tax and net assets of the selected banks as indices to determine financial efficiency by comparing the pre-mergers and acquisitions' indices with the post mergers and acquisitions' indices for the period under review. The study found that the post mergers and acquisitions' period was more financially efficient than the pre-mergers and acquisitions period. The study was based on the small sample (three selected banks) with an analysis of the t-test statistic, which may not provide detail understanding of the effects of merger in detail.

Khan (2011) investigated the pre and post merger financial performance of merged banks with the help of financial parameters like Gross-Profit Margin, Net-Profit Margin, Operating Profit Margin, Return on Capital Employed (ROCE), Return on Equity (ROE) and Debt-Equity Ratio. The result showed a positive effect of Merger and acquisitions (M&As). The study concluded that the merged banks can obtain efficiency and gains through Merger and Acquisitions (M&As) and passes the benefits to the equity share holders' in the form of dividend. The study has tested the hypothesis taking financial ratios of the banks before and after merger. Simple comparisons of the ratios might not identify the complete picture of the effects of bank merger.

Olalekan and Adebayo (2012) studied the implication of merger and acquisition of commercial banks in Nigeria on their profitability and other associated

measures of performance. The result of the analysis revealed that there is significant relationship between pre and post merger/acquisition capital base of commercial banks and level of profitability, there is significant difference between pre and post-merger acquisition earnings per shares. Their conclusion was that the merger and acquisition improve the overall performances of banks significantly and also has contributed immensely to the growth of the real sector for sustainable development. The study has also estimated the effects of the merger on the basis of before after comparison of financial ratios. Berger and Humphrey (1994) suggest that financial ratios may be misleading indicators of performance because they do not control for product mix or input prices.

Pandit and Srivastava (2016) analyzed the various valuation methods followed to understand their applicability in the merger process. Only a fair valuation and prudent post merger management can lead to long-term synergies. They emphasized on the valuation of merger deal which is essential aspect while comparing the performance of mergers. Their finding was that the post merger management can create synergies and positive effects on corporate firms' performance. This study is basically focused on valuation of corporate firms, so it contributes lesser on the effects of the merger on bank profitability.

Negative Effects of Merger and Acquisition

Tambi (2005) evaluated the impact of Mergers on Indian companies through a database of 40 Companies, using paired t-test for mean difference for four parameters; total performance improvement, Economies of scale, Operating Synergy and Financial Synergy. The study shows that Indian companies are no different than the companies in other part of the world and mergers were failed to contribute positively in the performance improvement. Tambi has given his limitations of study as,

“included results of only two years which may not provide the true picture and small size of data and variables”. True effects of merger could be assessed in a longer horizon of time period.

Doytch and Cakan (2011) examined the impact of mergers and acquisitions (M&A) sales on economic growth taking various sectors like primary, manufacturing and services in the group of the OECD countries. Applying Generalized Method of Moments (GMM) estimator, the study found no support of the hypothesis that M&A activity contributes to economic growth, except for growth of the services sector. Both, financial and non-financial domestic services M&A, have a positive effect on services growth. Primary sector and manufacturing M&A have negative effects on their own sectors growth rates. At the aggregate economic level, the impact of M&A on growth found to be negative. Doytch and Cakan (2011) used GMM estimator taking thirty one OECD countries for the period 1985-2008 and the research seems to be interesting in terms of data, methodology and the analysis.

Kemal (2011) used accounting ratios to analyze the financial performance of Royal Bank of Scotland (RBS) in Pakistan after merger. The study analyzed financial statements for four years (2006-2009) by using 20 vital ratios. The results show that the financial performance of RBS in the areas of profitability, liquidity, assets management, leverage, and cash flows has been quite satisfactory before the merger deal. It means that merger deal fails to improve the financial performance of the bank. Since, the study is based on only micro level data of only one bank; it could not present the macro-level perspective of the effects of merger on bank performance.

Mahesh and Prasad (2012) studied the performance of Indian Airline Companies after the consolidation of Airline sector in year 2007-08. The study investigated whether the Indian Airline Companies have achieved financial

performance efficiency during the post merger & acquisition period specifically in the areas of profitability, leverage, liquidity, and capital market standards. Paired sample t-test was used to determine the significance differences in financial performance standards two year before and two year after the merger activity. The finding showed that there is no improvement in return on equity, net profit margin, interest coverage, earning per share and dividend per share post-merger & acquisition. The study provides the insights of the effects of merger in airlines sector. But the study seems to be limited in a simple paired sample t-test for a very short period of time.

Oduro and Agyei (2013) examined the effects M&As on the performance of firms in the Ghanaian Stock Market from 1999 to 2010. The study was accounting based and used univariate analysis with T-testing as well as panel data methodology for the analysis. The evidence from panel methodology indicated that M&A has significant negative effect on the profitability of firms. The study suggests that M&As are properly planned, executed and evaluated. The study has used a simple panel OLS to find out the the relationship of the merger with profitability. It provides a general insight to understand a use of methodology in the merger study.

Chellasamy and Ponsabariraj (2014) compared pre and post merger financial performance of merged banks with the help of financial parameters like net profit to total income, net profit to working capital, return on assets and return on equity which includes profitability analysis, current ratio and liquidity ratio which includes liquidity analysis. The study covers the area of performance evaluation of Merger and Acquisitions in Indian banking sector during the period from 1999-2000 to 2010-2011. Using paired t-test, the study concluded that there is no significant differences in the before and after Merger and Acquisitions period. The study has also used

simple paired t-test to compare and find the differences of the performance of the merged banks; therefore, the methodological issue can be a limitation of the study.

Mixed Effects of Merger and Acquisitions

Meschi (2000) investigates the issues related with merger and acquisition aiming to supply the reader with a survey of the most widely debated issues related to mergers and acquisitions. The review of the existing theoretical and empirical literature on the causes and consequences of mergers showed that mergers are usually unprofitable and that the only groups who stand to profit from a merger are the shareholders of the acquired company. Their literature review presents mixed effect of mergers on market structure; the empirical evidence shows that mergers have no effect on concentration levels and market shares in the US, while they seem to have had a positive effect in the UK. The study provides a systematic review of merger theories. They argue that effect of merger in terms of economic welfare is hard to say.

Mantravadi and Reddy (2008) studied the impact of mergers on the operating performance of acquiring corporate in different industries, by examining some pre-merger and post-merger financial ratios, with the sample of firms chosen as all mergers involving public limited and traded companies in India between 1991 and 2003. The study results found that there are minor variations in terms of impact on operating performance following mergers, in different industries in India. The study further presents the facts that there have been numerous studies on mergers and acquisitions abroad, in the last four decades. Very few studies done on operating performance of acquiring firms, thus far, in other countries, have reported mixed results, with findings ranging from slightly positive to significantly negative impact on operating performance of acquiring companies, following mergers. The study has

accepted its limitations as the sample spanning a longer period would provide unbiased results.

Khan (2011) investigated to explain the motives behind some M&As that have occurred in India post-2000, analyze the benefits and costs to both parties involved and the consequences for the merged entity. The study concludes that mergers increased the firm size but there was no guarantee of maximizing profitability on a sustained business. Study has limited its scope within the merger experience of 5 Indian banks, therefore it might not be generalized at industry level.

Sinha and Gupta (2011) examines the Mergers & Acquisitions scenario of the Indian Financial Services Sector by taking data for eighty cases of M&A in the period from March 1993- Feb 2010 with ten financial parameters representing the various characteristics of a firm. The results of the study showed that PAT and PBDITA have been positively affected after the merger but the liquidity condition represented by Current Ratio was deteriorated. The study was based on a simple comparison of the pre and post-merger performance of these companies. There are several shortcomings of such kinds of simple comparison.

Poornima and Subhashini (2013) studied the impact of mergers and acquisitions on the financial performance of the acquiring firm during the pre-and post-merger period specifically in the areas of profitability, leverage, liquidity and managerial efficiency of the company. Paired sample t-test was performed to determine the significance difference in the financial performance of the acquiring firm. The finding of the study showed that there was no improvement in the financial performance of the firm due to acquisitions. Various literatures have shown that a simple comparison of the performance might not be a useful tool to measure the true

effect of merger since there might be the presence of other several variables on performance.

Kumara and Satyanarayana (2013) examined the comparative difference between pre and post merger and acquisition in terms of financial analysis from a list of merger and acquisition in India-2010. The results indicated a significant positive value creation to the acquired firms. The study showed that the liquidity positions of the merger and acquisition has improved but it was not statistically insignificant. Findings of the study was; the profitability position of the companies has positively increased in terms of return on capital employed, return on long term funds, and return on assets and it declines in terms of return on net worth. The financial performance of the firms improved after merger in terms of current ratio, liquidity ratio, ROCE, ROA, return on long term funds but most of the ratios are statistically insignificant.

Ahmed and Ahmed (2014) studied the effect of mergers upon financial performance regarding acquiring firms in a variety of manufacturing industries of Pakistan. They studied twelve manufacturing companies involved in the process of merger during 2000-2009. Result showed that the overall financial performance of acquiring manufacturing corporations insignificantly improved in after merger period. The liquidity, profitability and capital position insignificantly improved while the efficiency deteriorated in after- merger period. There may be several other variables affecting the post merger performance, but the study has not analyzed such factors.

Sharma (2016) studied the impact of merger on the financial performance of merging companies by examining some pre- merger and post- merger financial ratios. The sample consists of 9 BSE listed companies of metal industry involved in mergers during the year 2009-10. The findings showed a marginal but not significant

improvement in case of liquidity and leverage but the profitability results showed significant decline in RONW and ROA. The study suggested that in case of M&A, synergy can be generated in long run with the careful usage of the resources.

The international evidence does not provide strong evidence on merger benefits in the banking industry. The effect and experience of the mergers are country specific. Moreover, most of the studies are based on simple before after comparison of the variable of interest like RoE, RoA etc. But, the reasons behind it have not been analyzed in a deeper level.

Merger Studies in Nepalese Context

NRB has recently published a study on merger effectiveness, "Post merger status of banks and financial institutions and merger effectiveness (NRB, 2015)". The study was based on the before after comparison of financial ratios and opinion survey of the stakeholders. The study found that there is a gradual improvement in the financial ratios like return on equity (ROE), Return on Assets (ROA) and Credit to Deposit Ratios of the merged banks and financial institutions. Based on the financial ratios and a positive improvement on employee relationship and motivation, the report has concluded that there is a positive effect of merger policy in Nepalese financial system. Since, the study was based on the opinion survey of the respondents and comparison of simple accounting ratios, there seems to be a lack of econometric analysis of performance measurement of merged banks and financial institutions.

There are large number of banks and financial institutions merged in Nepal in a very short span of time. But still there is a lack of research study on the effect of merger in Nepalese banking system. Paudel (2012) conducted a research study on this topic applying a triangulation approach by using different sources of information i.e. both primary and secondary. The study has focused on the analysis of merger motives

and process, institutional arrangements and view, perception and prospects of authorities and employees regarding the merger of BFIs. Since, the study was done during the beginning of merger process in Nepal; the study has emphasized the importance of merger in Nepal. The study has made recommendation on improvements of merger process as well as conducting extensive research in this area. The study has reviewed international best practices as well as theories regarding merger and acquisition. Methodologically, the research a qualitative analysis of merger process, it has not given any measure of effectiveness of merger and acquisition in Nepal.

Adhikari (2014) has emphasized merger and acquisition as an indispensable tool for strengthening Nepalese banking and financial institutions. The research work has tried to explore the possible effects and impacts on the BFIs caused by M&A since 2011 in the Nepalese financial sector. The researcher has used Web-based online survey tool to identify the impact of M&A's on the employees and service consumers of merged entities. As per the study, Nepal Rastra Bank has successfully implemented the merger bylaws policy in Nepali BFIs and transformed the weak and unstable financial institutions into strong, stable and credible financial institutions. This research has focused on process of merger and some analysis of opinion survey regarding the merger. The research has not covered the analysis of the financial performance of the banks and financial institutions in its scope. The author has recommended future researchers to adopt better research techniques and method and cover more merged banks into consideration since this research has been conducted only in few merged BFIs.

NRB (2017) also published the findings of the study on performance of merged banks and financial institutions in Nepal. The study analyzed the merger

process, its effectiveness and conducted survey of opinion of the stakeholders of the merged entities. The study has taken 20 merged institutions as a sample and compared major financial ratios of the institutions with the period of before merger and after merger. The study found that there is a positive effect of merger on growth of capital, deposit and loans. The opinion survey provided a positive response towards the effectiveness of the merger in Nepal. Before and after study provides a change in the performance of the banks and financial institution but it cannot separate the possible causes of such changes.

Current literature review has identified some important issues relating to mergers and acquisition of banks and financial institutions in Nepal. After review of various literatures on merger and acquisitions, a research gap can be observed in the field of merger and acquisition in the Nepalese context. The gap can be pointed out as:

- There are a large number of studies on effects of merger in the developed part of the world (Mantravadi & Reddi, 2010). But, a very limited number of studies are carried out in our context. Although, there is a reduction of large number of financial institutions through merger and acquisition in Nepal, but the studies related to the merger seems to be lacking.
- Most of the merger related empirical studies are based on the comparison of simple financial ratios between before and after merger event. Such comparison fails to find out whether, the changes in the performance of banks and financial institution is the effect of merger or any other causes. In the language of the Berger et al. (1997), financial ratios may be misleading indicators of performance because they do not control for product mix or input prices.

- In Nepalese context, almost all of the studies seem to be based on qualitative assessment of the merger event. A study with a quantitative analysis of comprehensive data set seems to be the need to identify the effects of merger in Nepal.

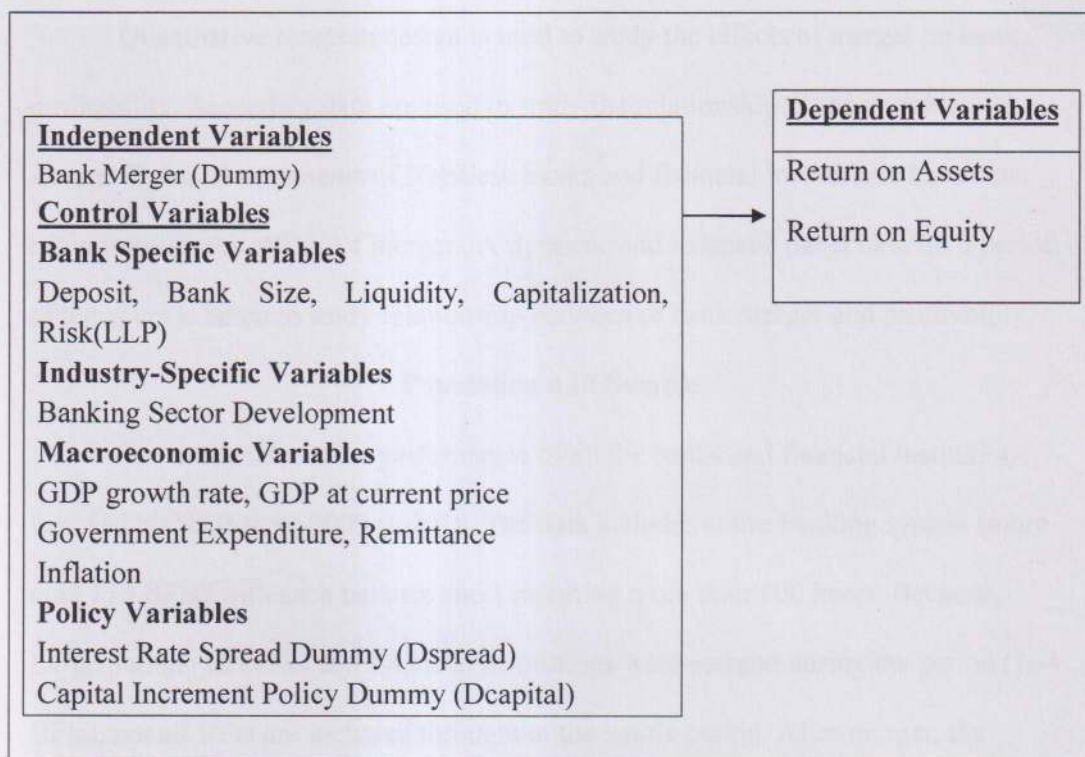
Despite the great efforts of financial sector consolidation, there seems to be lack of empirical studies investigating the unclear issue regarding the effects of merger on bank profitability. A question, “Is there any effect of merger and acquisition on profitability of banks and financial institutions?” remains unanswered until there is an in-depth study regarding this phenomenon.

But in Nepal, merger policy was guided by the policy action of the Central Bank. The objective may be to avoid financial distress and to protect the interests of depositors. In such scenario, objectives of merger may be more related with the safety and soundness of the overall banking system rather than efficiency in performance. The objectives set by regulatory authority cannot minimize the necessity of exploring the effect of merger and acquisition of banks and financial institutions in terms of profitability.

Although NRB has implemented merger and acquisition policies, but the banks and financial institution are always free to choose the options voluntarily. For BFIs in Nepal, merger is a kind of voluntary measure, the motives of mergers ultimately come to be market power, scale economies and cost efficiency. Therefore, the effect should be studied in terms of these attributes. This paper has tried to identify the answers and fill the gaps identified above regarding issues of the merger.

Conceptual Framework

Based on the review of the various international and Nepalese literature, following conceptual framework has been formulated to study the effect of merger in the profitability of the banks and financial institutions:



This study has tried to see the effects of bank-specific variables, industry-specific variable and macroeconomic indicators and uses one dummy variables of bank merger. Bank-specific, industry-specific and macroeconomic variables are taken as the determinants of profitability of banks and financial institutions. Wang et al. (2010) in their research empirically analysed the factors affecting the profitability of US banks over the period 2002-2014. Similarly, Yao et al. (2018) has analyzed the impact of bank-specific, industry-specific and macroeconomic variables on the profitability of banks in Pakistan. Ponce (2013) studied on, taking the bank-specific, industry-specific and macroeconomic variables. These studies have given the basis for designing the conceptual framework for this study.

CHAPTER III

RESEARCH METHODOLOGY

Research Design

Quantitative research design is used to study the effects of merger on bank profitability. Secondary data are used to study the relationship of the variables. Annual financial statements of Nepalese banks and financial institutions have been taken to study the effects of merger. A dynamic and balanced panel data for a period of ten years is taken to study relationship between of bank merger and profitability.

Population and Sample

The study covers the performance of all the banks and financial institutions licensed by NRB from 2009 to 2018. The data includes entire banking system (more than 150 BFIs) with each balance sheet reporting more than 100 items. Because, Large number of banks and financial institutions were merged during the period (164 BFIs), not all BFIs are included throughout the whole period. After merger, the number of Bank or financial institutions is reduced. Similarly, number increases as there is an entry of new BFI into the system. Since, entire banking system has been taken as a sample; the sample varies slightly with the merger or an entry of new BFIs.

Data Collection

This study uses secondary source of information i.e. performance of banks and financial institutions. The secondary source includes the annual financial statements (income statements and balance sheets) of the banks and financial institutions for a 10 year period from mid July 2009 to mid July 2018. The data are collected from the Nepal Rastra Bank where all of the Nepalese banks and financial institutions report their periodic financial statements. The period covers initiations of merger policies

and reduction of large number of BFIs through implementation of such policy in Nepal.

Research Methods

This study has collected and analyzed secondary data to study the effects of bank merger on performance of banks and financial institutions. Annual financial statements of banks and financial institutions provide the measurements of profitability of BFIs like; RoE and RoA. This study has tried to explore whether the effects of merger policies on profitability is significant or not in the context of Nepal. Basu et al. (2007) examined a large panel of more than 100 banks from Argentina to study the effects of bank merger on profitability between December 1995 and December 2000, a period of heavy bank consolidation and found a positive and significant effect of bank merger on bank profitability. Similar type of methodology with different variables and econometric tool has been applied under this study.

This study has adopted balanced dynamic panel data analysis to meet its research objectives. The panel data includes the annual financial statement of the BFIs for the period of 10 year from 2009 to 2018. A panel data set is one that follows a given sample of individuals over time and thus provides multiple observations of each individual in the sample. One of the main advantages of Panel data is that it enables the researcher to control for unobserved heterogeneity. Since panel data have both cross-sectional and time series dimensions, it provides the researcher with sufficient data points to reduce the likelihood of biasness in the parameter estimators.

To study the effects of bank merger on bank profitability, panel regressions have been used for the analysis. RoE and RoA are the dependent variables measuring the profitability of the banks and financial institutions. GMM has been taken as the main estimator to study the effects of merger.

There are certain assumptions of OLS viz; covariates are Exogenous ($E u_i | x_{1i}, x_{2i}, \dots, x_{ki} = 0$), errors are uncorrelated ($Cov u_i, u_j = 0$) and homoscedastic errors ($Var u_i = Var y_i | x_{1i}, x_{2i}, \dots, x_{ki} = \sigma^2$). In the absence of these assumptions, the OLS estimates are not considered to be unbiased and/or efficient. When variables are correlated with the error term, OLS estimator becomes inconsistent. Generalized Least Squares (GLS) is considered better than OLS to address issues regarding correlated errors. GLS is a correctly specified model for the error. It is more efficient than OLS estimation, as it leads to smaller standard errors, narrower confidence intervals, and larger t statistics. But, for the panel data regression with small time series (T) and large number of cross section (N), GMM is considered to be the best model for this study. GMM corrects the issues regarding endogeneity, unobserved heterogeneity and heteroskedasticity issues in the model. Main reason behind choosing GMM estimator is that it allows us to control for endogeneity and unobserved heterogeneity. A number of problems in estimating the determinants of banks profitability including endogeneity, unobserved heterogeneity, autocorrelations and profit persistence cannot be solved by fixed effects (Tan 2015). In line with the Tan(2015), after comparing between difference and system GMM estimators, the latter one is preferred because the system GMM estimator address the issue of unit root property and produces more precise results(Bond 2002). Besides using the one period lag of profitability indicators, through the Sargan over-identifying test, capital to assets has been treated as endogenous variable and other variables do not suffer any endogenous issue. Moreover, the endogenous variable is instrumented using levels lagged by two years periods. Sargan Test verifies the validity of instrument subsets which is based on H_0 : residuals should be uncorrelated with instruments.

Data Analysis and the Proposed Model

With the data gathered from secondary source, a robust model used to analyze the effects of bank merger on profitability. The main goal of this paper is to analyze the impacts of banks merger on the bank profitability of Nepalese banking sector while controlling for comprehensive bank-specific, industry-specific and macroeconomic variables. Two profitability indicators have been taken to measure the profitability in this study: Return on Assets (ROA), Return on Equity (ROE). Basu et al. (2004) used a model similar to the bank return generating model used by Demsetz and Strahan (1995), to study the effect of bank consolidation on profitability with slight modification. This study has also used similar model as;

Model:

$$R_{it} = \alpha + X_{it}'\beta + \rho D_i + \varepsilon_{it}$$

Where,

i denotes cross-sections and t denotes time-periods with $i=1,2,\dots,N$, and $t=1,2,\dots,T$.

R_{it} denotes bank returns (ROE/ROA), the dependent variables.

D_i is merger dummy i. e. variable of our interest. Value is assigned 1 when a bank is merged with another entity and 0 when no merger.

ε_{it} is error term.

α : is a scalar, β : is $K \times 1$ vector of coefficients and X_{it} is the i -th observation on K explanatory variables or risk factors. It includes the vector of control variables under study.

Simply,

$$\text{Profitability} = \alpha + \beta_0 \text{lag}(\text{Profitability}) + \beta_1 \text{bank.specific} + \beta_2 \text{Industry.specific} + \beta_3 \text{macro.economic} + D_{\text{merger}} + D_{\text{capital}} + D_{\text{spread}} + \varepsilon$$

or,

Model 1

$$RoE = \alpha + \beta_0 lagRoE + \beta_1 Capital\ to\ Asset + \beta_2 LLP / TL + \beta_3 Liquidfund / deposit + \beta_4 NII / TotalLoan + \beta_5 lnDeposit + \beta_6 lnSize + \beta_7 BSD + \beta_8 GDPGrowth + \beta_9 Inflation + \beta_{10} LnGDPC + \beta_{11} LnRem + \beta_{12} LnGExp + \beta_{13} Dmerger + \beta_{14} Dcapital + \beta_{15} Dspread + \varepsilon$$

Model 2

$$RoA = \alpha + \beta_0 lagRoA + \beta_1 Capital\ to\ Asset + \beta_2 LLP / TL + \beta_3 Liquidfund / deposit + \beta_4 NII / TotalLoan + \beta_5 lnDeposit + \beta_6 lnSize + \beta_7 BSD + \beta_8 GDPGrowth + \beta_9 Inflation + \beta_{10} LnGDPC + \beta_{11} LnRem + \beta_{12} LnGExp + \beta_{13} Dmerger + \beta_{14} Dcapital + \beta_{15} Dspread + \varepsilon$$

Control Variables

- Bank Size (lnSize), Capitalization (Capital to Assets), Net Interest Income to Total Loan (NII/Total Loan), Loan loss provision to total loan (LLP/TL), Liquid funds to deposit ratio are bank specific variables taken as Control Variables.
- Banking Sector Development (BSD) is taken as the industry specific variables. Banking sector Deposit to GDP Ratio is a proxy for Banking Sector Development.
- GDP growth rate, log of GDP at current price (LnGDPC), Government Expenditure (LnGExp), Remittance inflow (LnRem) and inflation (change in CPI) are macro-economic Variables taken for the study.

Variable Definitions and Measurement

Following variables are constructed and measured taking annual financial statements of the Nepalese banks and financial institutions.

Dependent Variables

The profitability (Bank Performance) variable is represented by two alternative measures: the ratio of net profits to total assets, i.e. the Return on Assets (ROA) and the net profits to equity ratio, i.e. the return on equity (ROE). In principle, ROA reflects the ability of a bank's management to generate profits from the bank's assets. Net profit to total assets ratio is taken to measure RoA. ROE indicates the return to shareholders on their equity. Net profit to Paid up Capital Ratio is taken as ROE under this study. Recent events have shown that the most common measure for a bank's performance (ECB, 2010). Higher level of RoE may either reflect a good level of profitability or more limited equity capital.

Determinants of Bank Profitability

Literature suggests the following bank specific, industry specific and macro-economic variables can be taken as the determinants of bank profitability (Performance).

Bank-specific Variables

Capital: The ratio of capital to assets (Capital/Assets) has been used to proxy the capital variable. Paid up capital is taken from the balance sheet of the banks and financial institutions. A positive relationship is expected between capital and profitability. It measures shareholder equity divided by total assets (Yao et al., 2018). Banks with more equity relative to liabilities enjoy higher profitability.

Net interest income to total (NIItoTotal Loan): This variable measures the ratio between Net interest incomes over total loans. It is also taken as a measure of efficiency in the banking business. Net interest income is a difference between interest income received on loans and advances and interest expenses made on deposit and borrowings. It is taken from income statement of the banks and financial

institutions. It is expected that an increase in the Net interest income to total loan improves the bank's profitability. It reflects how successful bank's investment decisions are relative to its interest income and interest expenses. It also indicates the spread of interest income and interest expenses.

Deposit is also taken as one of the banks specific variables. Log value of deposit has been taken to avoid the large absolute values of deposits and to change it into small value. Deposit is taken from balance sheets of the banks.

Size: The natural logarithm of total assets was taken as a proxy of size. The effect of a growing size on profitability has been expected to be positive to a certain extent. Banks with large asset size are expected to produce a higher profitability due to having more chances to create a diversified portfolio of interest-earning sources which reduce risk and to enjoy cost reduction due to economies of scope and scale (Yao et al., 2018).

Liquid fund to total deposit ratio is taken as the measure of liquidity. Liquid funds are those assets which can be converted into cash as and when required. Cash, Bank Balance, Money at call and Investments are the liquid assets(funds) defined by NRB.

Loan loss provision to total loan ratio is taken as the measure of risks. Loan loss provisions are provision made for the bad assets. NRB has classified the loans into pass, substandard, doubtful and loss category. Loan loss provision has to be made for different categories of such loans. Higher amount of loan loss provision has to be made for the higher amount of bad assets.

Industry-specific Variables

Banking Sector Development is taken as the industry specific variables. It is calculated as the total deposit of the banking industry to GDP ratio. Deposit to GDP

Ratio is a proxy for Banking Sector Development. NRB data shows that there is a gradual development of Nepalese banking sector.

Macroeconomic Variables

GDP Growth rate of GDP is taken as macroeconomic determinants of the bank profitability. GDP growth measures the level of economic growth. The banks are expected to deal with more operational activities including lending, borrowings, and non-interest bearing services during the economic growth. A positive relationship is expected between the GDP growth rate and bank profitability

CPI as proxy of inflation is taken as another macroeconomic determinants of the bank profitability. Annual percentage change in the consumer price index is used as a proxy of inflation. Various literatures show that the relationship between the inflation and the bank profitability seems to be mixed.

Similarly, log of GDP at current price, log of annual remittance inflow and log of annual Government Expenditure are also included in the model to study the effects of these macro-economic variables on profitability of the banks and financial institutions.

GDP at current price is the total output of an economy measured in monetary value. Annual GDP at current price has been taken as another macroeconomic variable. It is expected that there is a positive relationship between GDP at current price and bank profitability.

Remittance inflow is also considered to be one of the major drivers of Nepalese economy. It is the total monetary value of the transfer of money by the workers abroad to Nepal within one year period. Annual remittance inflow is taken as another macroeconomic variable. Remittance inflow is expected to have a positive relationship with bank profitability.

Government expenditure is the total amount spent by the government of Nepal within one year period of time. Government expenditure is assumed to have positive relationship with bank profitability.

Variable of Interest: Dmerger

The effect of merger and acquisition on profitability (performance) is checked through dummy variable (Dmerger) considering it 0 for pre merger period and 1 for post merger period.

There are other policies introduced by central bank (NRB) like Capital incremental Plan and Interest Spread. These policies might have significant effects on profitability of the banks in Nepal. Two dummy variables Dcapital and Dspread are also included as independent variables. The policy regarding Capital increment was introduced in 2015. Dummy variable Dcapital takes value 0 for the period before 2016 and 1 for the period 2016 and later. Similarly, Dspread has value 0 for the period before 2012 and 1 for the period 2012 and later.

Robustness Check

GMM estimator requires Sargan test of over-identifying restrictions. Model is considered to be robust if p value of Sargan Test is between 0.05 and 0.80 (Roodman 2009). Moreover, several regressions are run separately for different classes of banks and financial institutions to check the consistency of the results. Similarly, the data prior to merger also have been combined and run the regression to check the robustness of the model.

In line with the study of Athanasoglou et al. (2008), this study has also used the one period lag of profitability indicator (RoE and RoA) and the capital to assets has been treated as endogenous variable. The Sargan over identifying test has confirmed the endogeneity of capital to assets ratio. In order to make sure there is no

second order autocorrelations in estimation, the endogenous variable is instrumented using levels lagged by two years' period.

Hypotheses

The study has tested following hypothesis to meet the research objectives:

H1 : There is positive effect of bank merger on RoE.

H2 : There is positive effect of bank merger on RoA.

CHAPTER IV

RESULTS

This chapter provides a systematic presentation and the outcomes from the proposed methods and proposed relationship of the variables of interest. This chapter also analyzes and interprets the result of the empirical research.

Descriptive Statistics

Descriptive statistics provides summaries about the data used and other measures. The descriptive statistics of the variables used in the study are summarized in the tables 4.1. The table provides the number of observations, means, standard deviations, minimum values, and maximum values.

Table 4.1

Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
RoE	2200	0.195	0.310	-0.143	2.753
RoA	2200	0.018	0.028	-0.026	0.425
Dmerger	2200	0.101	0.301	0.000	1.000
Capital to Asset	2200	0.085	0.096	0.000	0.706
LLP/TL	2200	0.031	0.049	0.000	0.293
Liquidfund/deposit	2200	0.207	0.188	0.000	0.841
NII/TotalLoan	2200	0.040	0.039	-0.071	0.279
lnDeposit	2200	2.111	1.657	0.000	5.084
lnSize	2200	2.256	1.747	0.000	5.330
lnTotalLoan	2200	2.111	1.657	0.000	5.084
BSD	2200	74.556	13.735	0.000	93.116
GDPGrowth	2200	4.476	1.815	0.000	7.499
LnGDPc	2200	6.249	0.146	5.995	6.478
Inflation	2200	6.991	2.019	0.000	10.000
LnRem	2200	5.635	0.201	5.322	5.878
LnGExp	2200	5.621	0.214	5.315	6.012
Dspread	2200	0.700	0.458	0.000	1.000
Dcapital	2200	0.300	0.458	0.000	1.000

Return on Equity (RoE) is a simple ratio between net profits and paid up capital of banks and financial institutions. Mean value of the RoE is 0.195 for all banks and financial institutions during the period of this study. Standard Deviation is 0.310 and the RoE ranges from minimum -0.143 to maximum 2.753. There are some instances of negative RoE, when there is a negative profit of the banks or financial institutions. Some small financial institutions like Kabeli, Siddharth finance have negative RoE during their initial year of operations. Similarly, Kist bank had negative RoE in 6th year period under study. On the other hand, NBL had the highest RoE during the first year period of data under study. The highest RoE is attributed to the the small amount of paid up capital, when there is a higher value of net profit during the period. Similarly, Lalitpur finance, NIDC and EBL have higher values following the NBL.

Return of Assets (RoA) has been taken as the ratio of Net Profit to Total Assets of banks and financial institutions. Mean value of the RoA is 0.018 for all banks and financial institutions during the period of this study. Standard Deviation is 0.028 and the RoA ranges from minimum -0.026 to maximum 0.425. There are some instances of negative RoA, when there is a negative profit. Hamro Bikas Bank had the lowest RoA during the 1st year period under study. Arun Finance, Siddharth Finance and Kabeli were the institutions having negative RoA during the initial period under study. On the other hand, Peoples Finance registered the highest RoA during 5th year period under study. Similarly, small financial institutions like Narayani, Lalitpur and Arun Finance had followed the highest RoA during the period under study.

Capital to Assets is another variable taken as a proxy of capital level of the banks and financial institutions under study. Mean value of the Capital/Assets ratio is 0.085 for all banks and financial institutions during the period of this study. Standard

Deviation is 0.096 and the Capital/Assets ratio ranges from minimum 0 to maximum 0.706. Capital to Assets ratio is taken as leverage ratio in the banks. It also reflects the solvency position of the banks. NRB has set minimum 3% leverage ratio to be maintained at all times in the commercial banks of Nepal. Capital/Assets has a minimum value 0, because some of the years where banks were not under operation, the value is put 0 to create the balance panel. On the other hand, highest value is 0.706 when the banks start operation with its capital and the asset creation takes some time. During initial year of operation, banks have higher capital to assets ratio, but it comes down when there is a gradual increase in the assets of the banks. Mission, Baibhav, Janata, Bhaktapur finance had highest capital to assets ratio during their initial year of operation.

Loan loss provision to total loan (LLP/TL) is another variable under study, as a proxy of risk in the banks and financial institutions. Mean value of the LLP/TL is 0.031 for all banks and financial institutions during the period under study. Standard Deviation is 0.490 and the LLP/TL ranges from minimum 0 to maximum 0.293. As loans becomes non-performing, the loan loss provisioning increases. NRB has set loan loss provisioning requirement in a range from 1% to 100% of loans and advances according to the nonpayment of the loans by the borrower. Small BFIs like Lalitpur and Rising had highest level of LLP/TL during the period under study. The minimum value 0 has been observed due to inserting values 0 when there is no operation of BFIs during any period to create a balance panel.

Liquid fund to total deposit is a measure of liquidity in the banking business. Liquid fund to total deposit (Liquidfund/deposit) has been taken as the measure of liquidity under this study. Mean value of the LqF/TL is 0.207 for all banks and financial institutions during the period of this study. Standard Deviation is 0.188 and

the Liquid fund/total deposit ranges from minimum 0 to maximum 0.841. As per the NRB directives, commercial banks are required to maintain at least 20% of liquid assets to total deposit ratio at all times in the banks. Small institution like Bhajuratna, Uddyam, Peoples have recorded liquid assets to total deposit ratio to be more than 80% during their initial period of operation.

Net Interest Income to Total Loan (NII/Total Loan) has been taken as another variable. Mean value of the NII/Total Loan is 0.040 for all banks and financial institutions during the period of this study. Standard Deviation is 0.039 and NII Total Loan ranges from minimum -0.071 to maximum 0.279. Small banks like, National finance, Mercantile, Uddyam and progressive finance had recorded highest NII/Total loan to be more than 25% during some period under study. Small banks like Kuber, Crystal and Arun have negative NII/Total Loan during some period under study.

Log of Total Assets (lnSize) has been taken as another variable as a measure of size of the banks or financial institutions. Mean value of the (lnSize) is 2.256 for all banks and financial institutions during the period of this study. Standard Deviation is 1.747 and lnSize ranges from minimum 0 to maximum 5.330. Since the Total Asset of the banking sector is increasing every year, Log of Total Assets (lnSize) is also increasing gradually during the period under study.

Deposit to GDP ratio has been taken as a measure of Banking Sector Development (BSD) under this study. Mean value of BSD is 74.556 during the period. Standard Deviation is 13.735 and the BSD ranges from minimum 55.721 to maximum 93.116. Increase in the ratio indicates the banking sector is growing. Nepalese banking sector is growing continuously during the last decade (period under study).

GDP growth (GDPg) and Inflation are the macro-economic variables. Mean values of GDP and Inflation are 4.476 and 6.991 respectively. Standard Deviation of GDP and Inflation are 1.815 and 2.019 respectively. GDPg ranges from minimum 0.413 to maximum 7.499 during the period of ten years. Analyzing the data of the last 10 years, GDP growth rate is estimated to be more than 5% during the last 2 years. Whereas, it was close to 3 percent and lower in the rest of the period. Similarly, Inflation ranges from minimum 4 to maximum 10 during the period.

Other macro economic variables like GDP at current price, Government Expenditure and Annual Remittance inflows are also included in the study in their log form. Similarly, Dummy Variables like Dspread, Dcapital and Dmerger are taken to study the effect of such variables. These dummy variables are binary variables, so they take the values either 0 or 1.

This section explains the relationship among the variables used in the study. The bivariate Pearson correlation coefficients associated with different pairs of variables are reported in the correlation matrix Table. Pearson correlation analysis helps to analyze the nature and strength of relationship among the variables.

Table 4.2

Correlation Matrix

	RoE	RoA	Asset	LLP/TL	Liquidfund /deposit	NII/ TotalLoan	lnDeposit	lnSize	BSD	GDP Growth	LnGDPc	Inflation	LnRem	LnGExp
RoE	1.00													
RoA	0.77	1.00												
Capital to Asset	0.07	0.36	1.00											
LLP/TL	0.20	0.23	0.32	1.00										
Liquidfund/deposit	0.32	0.45	0.69	0.40	1.00									
NII/TotalLoan	0.50	0.60	0.56	0.34	0.72	1.00								
lnDeposit	0.49	0.41	0.45	0.41	0.59	0.63	1.00							
lnSize	0.49	0.42	0.47	0.42	0.62	0.65	1.00	1.00						
BSD	0.13	0.14	-0.21	-0.09	-0.17	-0.07	-0.10	-0.10	1.00					
GDPGrowth	-0.15	-0.12	-0.06	-0.07	-0.09	-0.13	-0.09	-0.09	-0.01	1.00				
LnGDPc	0.04	0.07	-0.17	-0.09	-0.15	-0.08	-0.09	-0.09	0.94	0.17	1.00			
Inflation	-0.08	-0.07	0.03	0.08	0.11	0.02	0.08	0.08	-0.24	-0.32	-0.28	1.00		
LnRem	0.10	0.11	-0.18	-0.08	-0.14	-0.06	-0.07	-0.07	0.94	0.08	0.97	-0.13	1.00	
LnGExp	0.00	0.02	-0.20	-0.12	-0.20	-0.13	-0.13	-0.13	0.93	0.22	0.98	-0.33	0.93	1.00

The above table shows the correlation (covariance) matrix for all the variables considered for the study. The table gives a way to check the potential collinearity issues with any higher correlation coefficient. Some instances are observed, where partial correlation coefficient is higher than 0.5 in absolute value. GMM estimator is assumed to correct the issues regarding multicollinearity observed among the variables.

Regression of Profitability on its Determinants

What determines the profitability in banks? To find out the relationship between profitability and its determinants, RoE and RoA have been regressed with various bank specific, industry specific and macro-economic variables. Dynamic panel estimators has been used for the study because it is designed for the situations of few time periods and many individuals (small T and large N), single left-hand side variable that is dynamic depending on its own past realizations, linear functional relationship, independent variables that are not strictly exogenous meaning correlated with past and possibly current realizations of the error, and heteroskedasticity and autocorrelation within individuals but not across them (Roodman, 2009).

Various literatures (Yao et al., 2018; Ponce, 2013, Wang et al., 2010) have applied the framework to study the determinants of profitability in the banking system. Their studies have shown that the bank specific, industry specific and macro-economic variables are the major determinants of the profitability. In line with the literatures, the regression is estimated using GMM estimator.

For this study, Capital to Assets Ratio (Capital/Assets), Loan loss provision to total loan Ratio (LLP/TL), liquid fund to total deposit Ratio (Liquid fund/Total Deposit), net interest income to total loan(NII/Total Loan) and log of Total Assets(ln Size) have been taken as the bank specific variables. Similarly, Banking Sector

Development (BSD) has been taken as Industry Specific Variable and Deposit to GDP ratio has been interpreted as a measure of Banking Sector Development (BSD).

Furthermore, GDP growth rate (GDPg), log of GDP at current price (LnGDPc), log of Remittance(LnRem), log of Annual Government Expenditure(LnGExp) and Inflation are taken as the macro-economic variables. On the other hand, RoE and RoA, the measures of profitability, have been taken as the dependent variables. Results are illustrated in the table below:

Table 4.3

Regression of Profitability Measures RoE and RoA on its Determinants

Independent Variables	RoE	RoA
Lag Dependant	0.0968* (2.100)	0.188* (2.370)
Capital to Asset	-0.622* (-2.00)	-0.011 (-0.33)
LLP/TL	-0.016 (-0.12)	0.001 (0.110)
Liquid fund/deposit	0.091 (0.880)	0.022 (0.930)
NII/Total Loan	1.094* (2.350)	0.199** (3.250)
lnDeposit	-0.353* (-2.50)	-0.016 (-0.39)
lnSize	0.405** (2.870)	0.017 (0.420)
BSD	0.0233* (2.490)	0.00163** (2.680)
GDP Growth	0.014 (0.860)	0.001 (1.160)
Inflation	-0.004 (-0.34)	0.000 (0.470)
LnGDPc	0.329 (0.130)	-0.042 (-0.24)
LnRem	0.026 (0.030)	0.016 (0.250)
LnGExp	-0.685 (-0.48)	0.017 (0.160)
Dspread	-0.146*** (-3.65)	-0.0162*** (-4.29)
Dcapital	-0.329*** (-5.14)	-0.0344*** (-4.15)
Constant	0.064 (0.020)	-0.032 (-0.13)
N	1979	1979
F(15, 220) =	89.73	
Prob > F =	0.000	
Sargan test of overid. restrictions: chi2(2) =	1.53	Prob > chi2 = 0.466

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

In the above table, the regression results show that both the lag of RoE and lag of RoA have significant relationship with the dependant variable and confirms the dynamic character of model specification. The coefficients of the lag take value of 0.0968 and 0.188 when profitability is measured by RoE and RoA respectively.

Furthermore, the regression results have shown that the Capital to Assets ratio has a negative relationship with profitability. It has significant negative relationship with the RoE. But the capital to assets ratio has no significant relationship with the RoA. In addition to the general trend there might be the effect of the policy introduced by the regulatory authority, NRB. NRB introduced capital increment plan for the banks and financial institutions in mid July 2015. As per the policy, commercial banks had to increase minimum paid-up capital from existing Rs 2 billion to Rs 8 billion by mid-July 2017. Such a sudden and multifold capital increment has diluted the profitability (RoE and RoA) because capital and assets are increased in the short period of time but it might take longer period to achieve profitability. It shows that the negative coefficient of the Capital to assets ratio is well supported by the Capital increment policy of the central bank.

Regression results showed that there is a strong effect of capital increment policy of the NRB. The coefficient of the Dummy variable, Dcapital, is significantly negatively associated with the profitability of the banks. Coefficient of the Dcapital are negative 0.329 and negative 0.0344 for the RoE and RoA respectively. It shows that Capital increment policy is associated with the reduction of the RoE of the banks by 32.9 percentages during the period under study, *ceteris paribus*. Similarly, A reduction of 3.44 percentages in RoA is associated with the capital increment policy of the central bank other things remaining the same. However, the absolute value of the net profit is increasing gradually in the banking sector.

Another variable affecting the profitability of the bank is the policy regarding interest rate spread. Regression result showed that the dummy variable Dspread has significant negative relationship with the bank profitability. Policy regarding interest rate spread has controlled the higher spread between interest income from credit

activities and interest expenses on deposit mobilization. A reduction of 14.6% on RoE and 1.62% on RoA has been associated with the introduction of interest rate spread policy. As the policy limits the interest rate spread within 5% for the commercial banks, the profitability of the banks has been squeezed in terms of ratios.

Net interest income to total loan Ratio (NII/TotalLoan) is another significant determinant of profitability as per the study. In line with the theory and empirical studies, the regression results confirm that NII/TotalLoan has a significant positive relationship with the profitability. The coefficients of the NII/TotalLoan are 1.094 and 0.199 respectively for RoE and RoA, which shows that it has strong positive effect on the profitability of the banking sector.

Banking Sector Development (BSD) is another determinant of profitability. BSD has been taken as a industry specific variable. The ratio between total deposit of the banking system and the GDP is taken as the measure of BSD. Regression result has shown that the BSD has a strong and positive relationship with the profitability of the banks. It shows that there is a normal trend of growth of the banking sector and it has positive relationship with the profitability of the banking system.

GMM results have shown that the \ln Deposit has significantly negative relationship with the RoE. But it has no significant relationship with the RoA, but the sign of the coefficient is negative. Similarly, \ln Size as a measure of total assets has positive and significant relationship with RoE. But, it has not significant relationship with RoA.

Other variables like Loan loss provision to total loan (LLP/TL), Liquid funds to total deposit (Liquid fund/Total Deposit), GDP growth (GDPg), Inflation, GDP at current price, Remittance, Government Expenditures do not have a statistically significant relationship with the profitability of the banks in Nepal.

Based on the above analysis, major determinants of bank profitability in Nepal are Dcapital, Dspread, Capital to Asset, NII/TotalLoan, BSD, Deposit and Size. Out of those variables, Dcapital, Dspread, Capital to Asset have negative effects on profitability.

Sargan test has been performed to test model robustness. Chi Square value is 1.53 and P-value of chi square is 0.466, which shows the model accepts (fails to reject) the null hypothesis of over identifying restrictions. It conforms that the GMM model is robust to estimate the determinants of profitability in Nepal.

Effect of Bank Merger on Profitability

The above section highlights on the determinants of the profitability in the banks and financial institutions. The evidence presented showed the effects of bank specific, industry specific and macro-economic variables on profitability (RoE and RoA) of Nepalese banks and financial institutions. In this section, the effects of bank merger on profitability (RoE and RoA) are studied by taking the determinants of profitability as control variables. Table 4.4 shows the GMM results of the effects of merger on bank profitability.

Table 4.4

Regression of Bank Merger on Return on Equity and Return on Assets

Independent Variables	RoE	RoA
Lag Dependant	0.0968* (2.1)	0.186* (2.36)
Dmerger	-0.0274 (-1.18)	0.00161 (0.73)
Capital to Asset	-0.605 (-1.93)	-0.0114 (-0.35)
LLP/TL	-0.015 (-0.12)	0.00143 (0.12)
Liquidfund/deposit	0.0808 (0.77)	0.022 (0.94)
NII/TotalLoan	1.061* (2.3)	0.200** (3.26)
lnDeposit	-0.358* (-2.46)	-0.0173 (-0.43)
lnSize	0.411** (2.85)	0.0182 (0.45)
BSD	0.0234* (2.48)	0.00162** (2.69)
GDPGrowth	0.0139 (0.87)	0.0012 (1.15)
Inflation	-0.00386 (-0.33)	0.000459 (0.47)
LnGDPc	0.309 (0.12)	-0.0417 (-0.24)
LnRem	0.0432 (0.04)	0.0153 (0.25)
LnGExp	-0.687 (-0.48)	0.0173 (0.16)
Dspread	-0.148*** (-3.66)	-0.0161*** (-4.30)
Dcapital	-0.327*** (-5.08)	-0.0345*** (-4.16)
Constant	0.0897 (0.02)	-0.0322 (-0.13)

F(16, 220) = 89.14

Prob > F = 0.000

Sargan test of overid. restrictions: $\chi^2(2) = 1.50$ Prob > $\chi^2 = 0.473$

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

Table shows the effect of bank merger on the profitability (RoE) of the banks and financial institutions. The GMM result shows that the Merger Dummy Variable (Dmerger) is not statistically significant.

After including Dmerger as an explanatory variable, the capital to assets ratio no longer remains statistically significant. However, the relationship is negative. It implies that the negative effect of capital to assets ratio on RoE has been reduced after inserting Demerger. Sargan test shows that the p-value of chi square is 0.466 which confirms that the model is robust and there is no over identifying restriction.

The significance of other determinants of profitability has not been changed after introducing the dummy variable Dmerger. Thus, the result of GMM estimator presented in table 4.7 and 4.8 illustrates that there is no statistically significant relationship of bank merger on bank profitability.

Regression of Bank Merger on RoE and RoA(Excluding Government Banks)

The results might be different when the government banks are excluded from the study. Therefore, some efforts have been made to check the effects of bank merger on the profitability after excluding the government owned banks from the study. The regression results are shown in the table 4.5.

Table 4.5

Regression of Bank Merger on RoE and RoA(Excluding Government Banks)

Independent Variables	RoE	RoA
Lag Dependant	0.0894*	0.198*
	(2.05)	(2.29)
Dmerger	-0.0407	0.000489
	(-1.59)	(0.18)
Capital to Asset	-0.563*	-0.014
	(-1.98)	(-0.47)
LLP/TL	0.00339	0.000964
	(0.03)	(0.08)
Liquidfund/deposit	0.0864	0.0274
	(0.85)	(1.12)
NII/TotalLoan	1.137*	0.214***
	(2.45)	(3.45)
lnDeposit	-0.23	-0.00328
	(-1.40)	(-0.07)
lnSize	0.289	0.00444
	(1.79)	(0.1)
BSD	0.0228**	0.00160**
	(2.84)	(2.72)
GDPGrowth	0.012	0.00112
	(0.88)	(1.12)
Inflation	-0.0068	0.000559
	(-0.68)	(0.56)
LnGDPC	-0.231	-0.0577
	(-0.10)	(-0.35)
LnRem	0.196	0.0164
	(0.24)	(0.27)
LnGExp	-0.466	0.0299
	(-0.38)	(0.28)
Dspread	-0.135***	-0.0161***
	(-3.72)	(-4.27)
Dcapital	-0.328***	-0.0354***
	(-5.53)	(-4.04)
Constant	1.431	-0.00809
	(0.45)	(-0.03)
N	1952	1952

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

Regression results showed a consistent pattern even after excluding government banks from the study. GMM estimator has again provided the similar result as the bank merger has no significant relationship with RoE and RoA. These

results have confirmed the previous results presented in the table...Other explanatory variables have similar effects on profitability as explained in the previous sections.

Effects of Bank Merger on RoE and RoA (A Class Bank only)

There were a large number of banks and financial institutions merged during the last decade. After studying the effects of merger in the overall banking sector, it is worthwhile to see the effects in the different classes of banks. Total 21 commercial banks participated in the merger till mid July 2018. Most of them were merged with B or C class institutions. There are only four instances where two A class institutions merged with another A class bank. Regression results of the effects of merger on RoE and RoA of commercial banks has been shown in the table 4.6.

Table 4.6

Regression of Bank Merger on RoE and RoA(A class Banks Only)

Independent Variables	RoE	RoA
Lag Dependant	1.327** (3.21)	0.225 (1.72)
Dmerger	-0.00468 (-0.06)	0.001 -0.86
Capital to Asset	1.55 (0.74)	-0.0295 (-0.62)
LLP/TL	0.22 (0.5)	0.00786 (0.98)
Liquidfund/deposit	0.651 (1.31)	0.00789 (0.36)
NII/TotalLoan	-0.252 (-0.08)	0.202* (2.08)
lnDeposit	1.116 (1.14)	0.00728 (0.3)
lnSize	-1.156 (-1.16)	-0.00545 (-0.22)
BSD	0.0805*** (6.92)	0.00352*** (7.59)
GDPGrowth	0.140*** (4.45)	0.00376*** (5.23)
Inflation	0.0654 (1.56)	0.00143 (1.15)
LnGDPc	0.14 (1.83)	0.359 (0.71)
LnRem	-0.676 (-0.67)	-0.179 (-3.17)
LnGExp	-2.531 (-1.46)	-0.207 (-0.20)
Dspread	-0.195 (-1.17)	-0.0142*** (-4.29)
Dcapital	-1.490** (-2.88)	-0.0288** (-3.37)
Constant	-18.04 (-1.79)	-0.343 (-1.89)
N	288	288

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

GMM results show that there is no significant relationship between bank merger and RoE and RoA of the A class commercial banks. Out of the total 21 'A' class banks involved in the merger process, only 4 mergers took place with the same

class banks but rest of the mergers happened with small B and C class institutions. Therefore, the effects of merger could not be significant in the 'A' Class commercial banks.

Effects of Bank Merger on RoE and RoA("B" Class Development Bank only)

"B" class Development banks are found to have highest number of the merger of financial institutions in Nepal. Merger has reduced 59 B class institutions till July 2018. The effects of bank merger on profitability of "B" class institutions has been shown in the table number 4.12.

Table 4.7

Regression of Bank Merger on RoE and RoA (B Class Development Banks only)

Independent Variables	RoE	RoA
Lag Dependant	1.262* (2.28)	0.566 (1.53)
Dmerger	-0.0343 (-0.64)	0.000385 (0.08)
Capital to Asset	0.496 (0.4)	0.21 (1.33)
LLP/TL	0.00513 (0.02)	-0.0059 (-0.31)
Liquidfund/deposit	-0.0452 (-0.08)	-0.0707 (-1.14)
NII/TotalLoan	1.836 (1.29)	0.232** (2.98)
lnDeposit	-0.1 (-0.38)	-0.0645 (-1.52)
lnSize	0.0596 (0.21)	0.0617 (1.45)
BSD	0.0157 (1.68)	0.00188** (2.89)
GDPGrowth	0.0327* (2.3)	0.00229*** (3.5)
Inflation	-0.00517 (-0.46)	0.0000313 -0.04
LnGDPC	0.433 (-0.19)	0.0273 (0.16)
LnRem	-1.192 (-1.24)	-0.0237 (-0.46)
LnGExp	1.953 (0.9)	0.0035 (0.02)
Dspread	0.013 (0.18)	-0.00608 (-1.21)
Dcapital	-0.913* (-2.47)	-0.0455* (-2.06)
Constant	-2.674 (-0.64)	-0.197 (-0.73)
N	918	918

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

GMM result shows that the effect of bank merger on profitability of the development banks is also statistically insignificant. Interestingly, Dspread has no significant effects on profitability in the case of development banks.

Effects of Bank Merger on RoE and RoA (“C” Class Finance Companies Only)

Finance Companies are small financial institutions in Nepal. They constitute less than 3 percentage of share in the total assets of the banking system. Total 55 finance institutions were reduced through merger. Most of them were merged with Development banks and Commercial banks. The effects of merger on RoE and RoA of finance companies are presented in the table 4.8.

Table 4.8

Regression of Bank Merger on RoE and RoA(C Class Finance Companies Only)

Independent Variables	RoE	RoA
Lag Dependant	0.470*	0.237
	(2.17)	(1.41)
Dmerger	-0.0405	-0.00279
	(-0.90)	(-0.48)
Capital to Asset	-0.457	-0.0195
	(-0.57)	(-0.23)
LLP/TL	0.0981	0.0178
	(0.44)	(0.68)
Liquidfund/deposit	0.172	0.0439
	(1.02)	(0.79)
NII/TotalLoan	0.422	0.193
	(0.63)	(1.47)
lnDeposit	0.0934	0.0451
	(0.25)	(0.47)
lnSize	-0.0363	-0.0413
	(-0.10)	(-0.44)
BSD	0.0195***	0.00198**
	(3.52)	(3.3)
GDPGrowth	0.0281**	0.00293**
	(2.91)	(3.17)
Inflation	0.00905	0.002
	(0.64)	(1.11)
LnGDPc	1.701	0.15
	(1.27)	(1.06)
LnRem	-0.581	-0.0175
	(-0.88)	(-0.21)
LnGExp	-1.062	-0.107
	(-1.52)	(-1.08)
Dspread	-0.140*	-0.0243***
	(-2.30)	(-3.55)
Dcapital	-0.264*	-0.0266
	(-2.07)	(-1.86)
Constant	-2.885	-0.39
	(-1.00)	(-1.51)
N	710	710

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

In accordance with the previous results, the effect of merger on profitability remains insignificant in finance companies also. These institutions were merged with and acquired by larger institutions and the remaining institutions have no effects of

merger. The GMM estimators showed slightly different coefficients in the regression. Since these institutions are very small and constitute only 3 percent of the total assets of the banking system, the effects of determinants of the profitability found to be slightly different from larger banks.

Consolidating Premerger Data of Merged Banks and Financial Institutions

After studying the effects of bank merger on different classes of banks and financial institutions, it has been found worthwhile to check the effects of bank merger on profitability by combining data for premerger period. For this purpose, premerger data of different banks are consolidated and estimated using GMM. The results are shown in the table 4.9.

Table 4.9

Consolidating Premerger Data of Merged Entities

Independent Variables	RoE	RoA
Lag Dependant	0.257 (1.70)	0.0831 (1.17)
Dmerger	-0.0205 (-0.74)	0.000512 (0.22)
Capital to Asset	-0.335 (-0.42)	0.124 (1.28)
LLP/TL	-0.794*** (-3.91)	-0.293*** (-4.74)
Liquidfund/deposit	0.0656 (0.32)	0.000796 (0.03)
NII/TotalLoan	-0.369 (-0.93)	0.0652 (1.05)
lnDeposit	0.0373 (0.18)	0.00763 (0.26)
lnSize	0.235 (1.49)	-0.00798 (-0.52)
BSD	0.0717*** (13.23)	0.00563*** (11.11)
GDPGrowth	0.0804*** (6.75)	0.00640*** (7.20)
Inflation	0.0339** (3.07)	0.000647 (0.51)
LnGDPC	13.11*** (8.39)	1.098*** (8.41)
LnRem	-4.624*** (-5.92)	-0.327*** (-4.88)
LnGExp	-7.451*** (-10.44)	-0.713*** (-10.91)
Dspread	-0.257*** (-4.44)	-0.0107 (-1.63)
Dcapital	-0.341* (-2.38)	-0.00264 (-0.30)
N	1979	1979

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

After adding premerger data of different banks, the effect of bank merger on profitability remains similar in line with the previous analysis. Dmerger has no

statistically significant relationship with RoE and RoA. Other explanatory variables have slightly different relationship with the bank profitability than explained earlier.

Existing Merged Banks Only

Finally, there was one scenario for analyzing the effects of merger on profitability of existing banks or financial institutions which were merged at least once during the last ten years. Table 4.10 shows that the results of regression of only merged banks with pre and post merged data.

Table 4.10

Existing Merged Banks Only

Independent Variables	RoE	RoA
Lag Dependant	0.297 (1.94)	0.308 (1.72)
Dmerger	-0.0202 (-0.46)	0.00123 (0.27)
Capital to Asset	0.309 (0.35)	0.0663 (0.79)
LLP/TL	0.0402 (0.18)	0.02 (1.39)
Liquidfund/deposit	-0.0411 (-0.18)	-0.00242 (-0.10)
NII/TotalLoan	-1.8 (-1.47)	0.00508 -0.07
lnDeposit	-1.028** (-3.14)	-0.0683 (-1.49)
lnSize	1.032** -3.1	0.0663 -1.46
BSD	0.0782*** (8.64)	0.00478*** (8.08)
GDPGrowth	0.0836*** (4.65)	0.00553*** (4.19)
Inflation	0.0409** (3.07)	0.00283 (1.78)
LnGDPc	10.41** (3.33)	0.536* (2.65)
LnRem	-4.270* (-2.61)	-0.209* (-2.23)
LnGExp	-5.815*** (-5.30)	-0.314** (-3.32)
Dspread	-0.325*** (-5.28)	-0.0274** (-3.44)
Dcapital	-0.607*** (-4.42)	-0.0426* (-2.54)
N	351	351

t statistics in parentheses

* p<0.05, **p<0.01, *** p<0.001

Regression was run after taking the data of merged banks of financial institutions only. This scenario also supported the previous result i.e. there is no significant effect of merge on bank profitability.

CHAPTER V

SUMMARY, DISCUSSIONS, AND IMPLICATIONS

This chapter includes four sections. It is divided into major findings, practical and research implications and discussion of this study. Finally, critique of the study has been presented at the end which includes the limitations and possibility of improvements.

Major Findings

Nepalese banking system has passed through a major consolidation during the last one decade. Bank merger and acquisition policy was introduced by NRB in 2011. After the implementation of the policy, large number of banks and financial institutions merged, as a result of which a significant number of banks and financial institutions have been reduced. Within a decade, more than 160 banks and financial institutions merged to become less than 45 banks. This study has analyzed the effect of merger on the profitability of banks and financial institutions.

Regression of determinants of profitability has shown that the major determinants that affect bank profitability are; Dcapital, Dspread, NII/TotalLoan, BSD, Capital to Assets, lnDeposit and lnSize. The effect of Dcapital on RoE found to be negative 32.9% while the effect is only negative 3.44% on RoA. Similarly, the effect of Dspread on RoE is negative 14.6% whereas the effect on RoA is negative 1.62%. The effect of NII/TotalLoan on RoE is 109.4%. However, the magnitude of effect on RoA is lower as compared to RoE i.e. 19.9%. BSD has positive and significant effect of 2.33% on RoE while the effect is 0.163% on RoA. Moreover, Capital to Assets has negative and statistically significant effect on RoE. The

coefficient of effect is negative 62.2%. Although the relationship of capital to assets with RoA is negative, its effect on RoA is very small and statistically not significant. The \ln Deposit has negative relationship with RoE. The effect is negative 35.3% which is statistically significant. The \ln Size has positive and significant relationship with RoE only. The coefficient of \ln Size is 0.405.

Impact of bank merger on profitability has been measured by the effects of merger dummy on RoE and RoA. The regression has shown that there is no significant relationship between bank merger and the RoE. Similarly, the effect of bank merger on RoA also found to be insignificant.

To study the effects of bank merger on profitability, several regressions were run splitting different classes of banks and financial institutions. Firstly, Government banks were excluded from the analysis. Still the regression results showed that there was no significant relationship between bank merger and profitability. Dmerger had no statistically significant impact on the RoE and RoA. These results confirmed consistency and robustness of the results.

To validate the results of the study, several other regressions were run. The dataset were split into several sub categories and regressed. Separate regressions were run for all three classes of banks and financial institutions. The effects of merger remained statistically insignificant in all classes. But, the determinants of profitability have slightly different coefficients for different classes as the nature and size of the banks differed.

Finally, the data prior to merger were combined for the later merged banks to check the consistency of the effects of merger on bank profitability. After combining premerger data, the regression results provided a consistent result with the previous

analysis. In all cases, bank merger had no statistically significant relationship with RoE and RoA.

There are other control variables in the model. In all cases, Dcapital and Dspread were found to be strong and significant variables affecting profitability. Capital increment policy and Interest rate spread policy were found to be major determinants of profitability in recent years in Nepalese context. Both of these variables had negative effect on profitability. On the other hand, macro-economic variables like GDP at current price, GDP growth rate, Government expenditure, Remittance inflow and inflation had no statistically significant relationship with bank profitability.

Discussion

Mergers and Acquisitions (M&A) is considered to be one of the best processes of business restructuring. The process of M&A gained momentum during the last several years. Theoretically, merger brings benefits like synergy, economies of scale and scopes, cost minimization, market power and ultimately increases competitive advantages. Globally, merger and acquisition were begun in the 19th century. But the phenomenon is new in the context of Nepal. Merger and acquisition were accelerated after the initiation of merger and acquisition bylaws in 2011 by NRB.

Globally, there are a large number of studies conducted to explore the effects of merger and acquisition, but in the Nepalese context, very few studies have been carried out. This study has tried to explore the effect of bank merger on bank profitability. Return on Equity (RoE) and Return on Assets (RoA) were taken as measure of profitability and the Merger Dummy (Dmerger) was the variable of interest. Using annual financial data of the banks and financial institutions from July

2009 to July 2018 and GMM estimator, the findings of the study showed that the effects of merger on profitability was not statistically significant during the period.

The effects of merger seemed to be insignificant in A class banks. Twenty five A class institutions were involved in the merger process. Only four A class institutions were merged with same class and other were merged with small financial institutions. Therefore, the effects of merger seemed insignificant in the profitability of the A class banks. The highest number of mergers was happened in the B class institutions. Seventy three B class institutions were involved in the merger process. The results showed no significant relationship between bank merger and profitability in B Class institutions too. Similarly, the effect of bank merger on profitability of C class institutions was also insignificant. Sixty one institutions were involved in the merger process and fifty were reduced. These institutions were merged with bigger institutions. There were twenty five institutions in operation at the end of mid July 2018. These were "left-over institution" therefore; the merger had no effects on their profitability (NRB, 2018).

The finding of this study showed that there was no statistically significant effect of bank merger on bank profitability in Nepal. These results were similar with the results of the study of Poornima and Subashini (2013). They studied the impact of mergers and acquisitions on the financial performance of the acquiring Indian firm during the pre-and post-merger period specifically in the areas of profitability, leverage, liquidity and managerial efficiency of the company. The finding of their study showed that there was no improvement in the financial performance of the firm after merger and acquisition. Chellesamy and Ponsabariraj analyzed the performance evaluation of profitability pre and post- period of Mergers and Acquisitions of select scheduled commercial bank in India and found that there was no significant difference

among the pre and post- period of Mergers and Acquisitions of net profit to working capital ratio, return on asset ratio and return on equity ratio of select scheduled commercial banks in India. Kemal (2011) used accounting ratios to analyze the financial performance of Royal Bank of Scotland (RBS) in Pakistan after merger. Kemal found that the financial performance of RBS in the areas of profitability, liquidity, assets management, leverage, and cash flows had been quite satisfactory before the merger deal and concluded that merger deal failed to improve the financial performance of the bank.

The results of the study contradict with the result of the studies Basu et al. (2004), Joshua (2010) and Khan (2011). Basu et al. (2004) examined a large panel of more than 100 banks from Argentina to study the effects of bank consolidation on performance between December 1995 and December 2000 and found a positive and significant effect of bank consolidation on bank profitability. Joshua (2010) made a comparative analysis of the impact of mergers and acquisitions on financial efficiency of banks in Nigeria and found that the post mergers and acquisitions' period was more financially efficient than the pre-mergers and acquisitions period. Similarly, Khan (2011) studied pre and post merger financial profitability of merged banks with the help of financial parameters and found that merged banks can obtain efficiency and gains through Merger and Acquisitions (M&As) and passes the benefits to the equity share holders' in the form of dividend.

One of the major factors that affect the RoE and RoA of Nepalese banks and ultimately affecting the results of the study could be the regulation of NRB regarding capital increment of banks and financial institutions. Nepal Rastra Bank, through its Monetary Policy 2015/16, directed banks and financial institutions to raise minimum paid-up capital by up to four times to Rs. 8 billion (for Commercial Banks) within the

next two years. Four-fold increases in the capital of banks and financial institutions diluted the proportion of RoE and RoA. An absolute amount of net profits of the banks and financial institutions was gradually increasing in general. But, the Return on Equity and Return on Assets are the ratios which decrease as there is sudden increase in the capital or assets of the banks. The GMM regression result of this study showed that there was a significant negative effect of Capital to Assets ratio on Return on Equity (RoE). The capital to assets ratios is also negatively associated with Return on Asset (RoA), but it is insignificant.

Some reasons behind the insignificant effects of merger on bank profitability were discussed and explored by interviewing the expert bankers of Nepal. The merger in Nepal is a recent phenomenon; therefore, it could be a very short period to observe a true effect of merger on bank profitability. Merged banks and financial institutions have incurred some cost during the process of merger and acquisitions like; branch relocation expenses, software installation and migration expenses, new office establishment expenses, etc. Similarly, numbers of staffs were not reduced significantly during the process of merger and acquisition of Nepal. Moreover, there were some challenges of cultural association among the staff of merged entities. Due to these reasons, the merged banks failed to achieve benefit of cost minimization in the short period of time. On the other hand, number of branches is increasing rapidly after the mandatory branch expansion policy introduced by NRB. Number of branches of commercial banks doubled during the last two years after introduction of mandatory branch expansion policy. Therefore, the theoretical benefits of merger like cost minimization and revenue maximization have not been observed during a short period of time. It may take a longer period to obtain a visible effect of merger on bank profitability in Nepal.

In Nepal, merger and acquisition was accelerated after the initiation of NRB. The motive behind the merger and acquisition was to make financial system resilient, safe and sound. A reduction of large number of banks and financial institutions is regarded as success of merger and acquisition policy. Therefore, the objective behind the merger seems to be a reduction of weak institutions in the system. As a result, NRB can play its regulatory and supervisory role effectively after reducing the large number of weak institutions. In that sense, the merger and acquisition policy seem to be effective. But in this study, effects of merger were assessed in terms of the bank performance especially profitability. Return on equity (RoE) and Return on Assets (RoA) are measured and regressed with bank specific, industry specific and macro-economic variables. Measurement and analysis of RoE and RoA tries to assess the business-oriented motives of merger rather than regulatory perspectives. Therefore, the effects of merger in terms of profitability can be different from effects of merger in terms of the regulatory objectives. Kotnal (2016) identifies the merger as a helpful tool for the survival of the weak banks by merging into the larger bank. In a same way, merger and acquisition policy might be effective for reducing large number of weak banks and financial institutions in Nepal. But in terms of profitability, this study has shown that there is a no significant effect of bank merger on profitability.

Methodologically, the literature in the field of corporate finance and economics has been enormously developed but only in the developed part of the world. In our context, simple financial ratios of the before after period are compared to assess the effect of the policy interventions. But, such comparison can have serious limitations. This study used GMM estimator in return generating model used by Basu et al.(2004) taking annual financial data for 10 years from mid July 2009 to 2018. GMM estimator is considered to be an efficient estimator for panel data analysis and

to resolve the issues of endogeneity, unobserved heterogeneity and heteroskedasticity. Furthermore, the robustness of the results have been tested by using Sargan test and proved that the results are robust.

Practical and Research Implications

There are many literatures and studies conducted on merger of banks and financial institutions. However, in a country like ours where the practice of merger is a comparatively new phenomenon, very few literatures, researches that have analyzed the effect of merger on banks and financial institutions. Policymakers and Regulators of the banking sectors are giving more importance to the bank merger in the hope of improving financial performance of banks but the international studies on this subject have produced mixed results. Some studies have evidenced that merger brings positive results in the performance whereas other studies have not found any meaningful improvement in performance as a result of a merger. In the context of Nepal, there seems to be an ambiguity with regards to the effects of merger on bank performance. This study has tried to explore the effects of merger and to bring clarity in the ambiguous issues. The findings of this study have both practical and research implications. This study contributes to provide empirical evidence on effects of bank merger and acquisitions.

Merger and Acquisition is relatively a new phenomenon practiced in the banking sector of Nepal. Every year large number of banks and financial institutions are participating in the merger process. The effects of the merger on bank profitability are unclear yet. This study contributes to understand and shed lights on the effects of merger on bank profitability. In this way, this research is useful for the bankers and practitioners of this field.

There is a lack of research in the field of banking sector, despite of a large number of banks and financial institution are merged in a very short period of time. Still, arguments in favor and against the merger have remained theory based. This research provides the empirical evidences based on the quantitative assessment of banking sector profitability. Therefore, this research contributes to the existing limited resources of empirical evidence. This study has provided a literature as well as directions to the future researchers.

Most of the studies are based on the qualitative assessment of the merger policies. Moreover, the effect is assessed from the regulatory point of view only. The effect of merger has not been assessed from the profitability point of view. This research has tried to assess the merger quantitatively and has shown the direction towards quantitative assessment of the merger practices. It is expected to be a valuable input for the policy makers and planners.

Critique of the Study

This study focused on the financial profitability of Nepalese banks and financial institutions during the last one decade. Bank merger and acquisition was a recent phenomenon in the context of Nepal. Every year large number of banks and financial institutions are participating in the merger and acquisition process. The merger and acquisition might have a longer term impact. So, it may be earlier to conclude the effect of merger during the process of large number of banks merger. The study accepts its limitation as it may be too early to conclude that mergers does not have effect on profitability.

In the meantime, there are other policy intervention of NRB in the areas of capital increment, interest spread regulations and branch expansion. This study has limited its scope to the bank merger and acquisition only and has not analyzed the

effects of each of such interventions in detail. Finally, the need of a detailed study incorporating the effects of such policy intervention cannot be ruled out.

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