MASTER THESIS
MSc in Business Administration
Financial Management Track

The Impact of M&As on Bank Performance

Donna Cherie (s1457160)

FACULTY
School of Management and Governance

UNIVERSITY
University of Twente
Postbox 217
7502 AE Enschede
The Netherlands

EXAMINATION COMMITTEE
Prof. Dr. Rezaul Kabir
Dr. Xiaohong Huang

UNIVERSITY OF TWENTE.

20 August 2014

Acknowledgement

This study is a master thesis for receiving the MSc degree in Business Administration at the University of Twente. First and foremost, I would like to express my deepest appreciation to Professor Rezaul Kabir, my first supervisor, for his valuable guidance, critical comments, and kind support in the preparation of this thesis. I also would like to thank my second supervisor, Dr. Xiaohong Huang, for her useful comments and guidance especially during the finalization of this master thesis. Professor Rezaul Kabir and Dr. Xiaohong Huang have spent considerable time and efforts to assist me accomplish this master thesis. In addition, I especially like to acknowledge the University of Twente for offering me the opportunity to experience one year master program in Business Administration. Finally, my special thanks to my family for their unconditional love, support, and encouragement during my study.

Abstract

The present study purposes to test the impact of mergers and acquisitions on bidder bank performance. The study is conducted using two methods, including event study method to measure stock performance and financial ratios analysis to measure accounting performance. Event study method analyzes the cumulative abnormal return around announcement date and completion date. Financial ratio analysis compares performance of the bidder bank before and after the merger and acquisition and explores the source of performance changes.

The result of event study analysis shows negative but not significant performance changes of bidder banks following mergers and acquisitions. Deeper analysis to cross-border versus domestic acquisition and acquisition of listed target versus non-listed target also could not prove performance changes of bidder banks following mergers and acquisitions. Meanwhile, the financial ratio analysis shows statistically significant negative changes of performance of bidder banks following mergers and acquisitions. Industry-adjusted median return on equity statistically significant decrease at 3.15% level from 5.35% to 2.20%, in line with the significant decline of industry-adjusted mean return on equity at 4.76% level from 6.26% to 1.50%. Reduction of return on equity is caused by the reduction of earning diversification, the increase of cost, the increase of asset impairment, and the increase of liquidity risk.

Keywords: Mergers and Acquisitions, Banking Industry, Event Study, Financial Ratio Analysis

Table of Contents

1. Introduction 1

2. Literature Review 5

2.1. Concepts of Merger and Acquisition 5

2.2. Empirical Studies about Impact of Bank Merger and Acquisition 10

3. Hypotheses 14

4. Research Methodology 18

4.1. Method to Measure Stock Performance 18

4.2. Method to Measure Accounting Performance 21

5. Data Sample 25

6. Empirical Results 27

6.1. Stock Performance Analysis 27

6.2. Accounting Performance Analysis 36

7. Conclusion 44

Appendices 47

Bibliography 50

1. Introduction

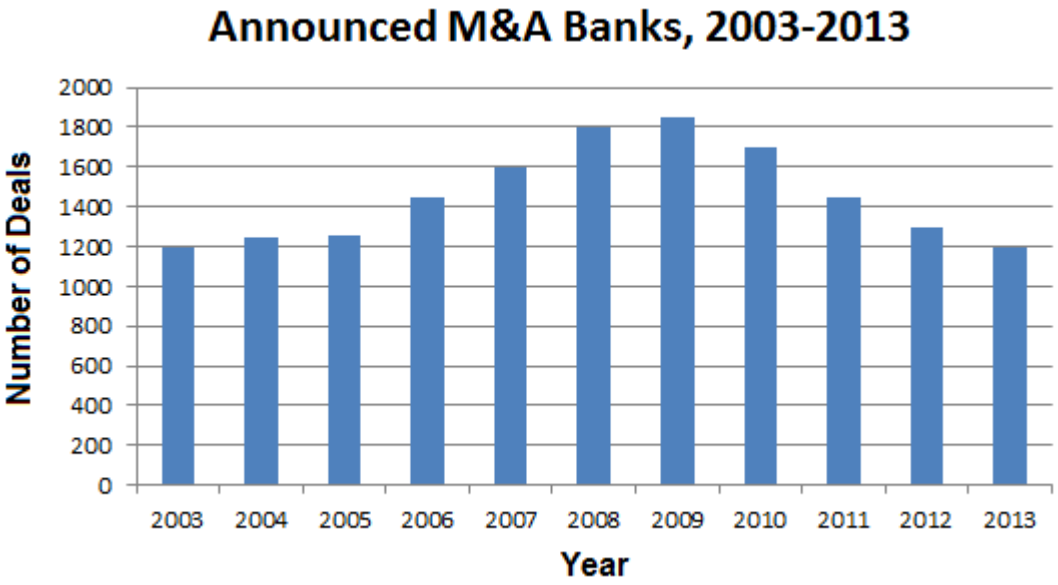
Bank merger and acquisition (M&A) is an interesting topic that has become a focus of many academic studies. Unlike the other sectors that mostly attract investors and shareholders, M&A in banking industry is interesting for many parties, like borrowers, depositors, and policy-makers. One of the reasons is the crucial role of banking industry in influencing economy condition (Altunbas & Marques, 2008). Although M&A is believed to increase performance of banks through synergies of bidder and target banks (Cornett, et al., 2006), some deals did not give positive impact to bidder bank performance[1]. The impact of M&A on the value of bidder firm is inconsistent (Palepu, et al., 2013). The present study will discuss the impact of M&A on bidder bank performance during 2008-2010 using two approaches, stock analysis and accounting analysis.

The amount of M&A transaction has fluctuated since 2000. During 2000-2002, the number of announced M&A transaction worldwide decreased significantly in almost all countries and all sectors. The recession in developed countries is suspected as the cause of downturn in the amount of announced M&A transactions. The financial recovery is allegedly as the cause that boosted the increased number of announced M&A transactions from 2002 to 2007. The financial crisis that re-occurred at the end of 2007 is conceived to be the cause of the decrease in the number of announced M&A transactions from 2007 to 2009, which slightly increased in 2010, but then back to decrease gradually during 2010 to 2013 (imaa-institute.org).[2]

[1] See Bertrand and Betschinger (2012), Akben-Selcuk and Altiok-Yilmaz (2011), and Behr and Heid (2011) for reference supporting hypothesis that M&A did not give positive impact to bidder bank performance.
[2] The Institute of Mergers, Acquisitions and Alliances (IMAA) is an academic, not-for-profit research think tank on mergers, acquisitions and alliances (imaa-institute.org).

Source: imaa-institute.org

Figure 1. **Number of announced M&A for all sectors (2003-2013)**



Source: imaa-institute.org

Figure 2. **Number of announced M&A for banks (2003-2013)**

Although the amount of announced M&A in most industry decreased during 2007 to 2009, the amount of announced M&A in banking sector has increased during this period. Moreover, when most sectors experienced an increase in amount of announced M&A during 2009 to 2010, amount of announced M&A in banking sector decreased during this period (imaa-institute.org). Financial crisis is suspected as one of the cause of fluctuating movement of amount of announced M&A during 2007 to 2010. The phenomenon indicates different trends in banking sector compare with other sectors that is interesting to be explored.

Previous literature about M&A generally shows increasing in return to target firm, however the impact of M&A on the value of bidder firm is inconsistent (Palepu, et al., 2013). Some studies show increasing in value[3], some show performance declining[4], and some show insignificant impact for bidder firms[5]. The positive impact of M&A comes from many sources, such as revenue enhancement and cost reduction (Cornett, et al., 2006). The negative impact is caused by some reasons, like agency problems and the cost of integration (Bertrand & Betschinger, 2012).

Many scholars examined the impact of M&A on bank performance using two different approaches. Some research analyzed performance of banks around M&A through providing evidence on stock market reactions for the banks involved in M&A[6]. Other researchers measured the M&A effect on bank performance based on accounting data[7].

---

[3] See Rani, et al. (2014), Chronopoulos, et al. (2012), and Fields, et al. (2007) for reference supporting that M&A give positive impact to bidder bank performance.
[4] See Bertrand and Betschinger (2012), Akben-Selcuk and Altiok-Yilmaz (2011), and Behr and Heid (2011) for reference supporting that M&A give negative impact to bidder bank performance.
[5] See Asimakopoulos and Athanasoglou (2013), Marimuthu and Ibrahim (2013), and Campa and Hernando (2005) for reference supporting that M&A does not give significant impact to bidder bank performance.
[6] See Lensink and Maslennikova (2008), Goddard, et al. (2012), Al-Khasawneh and Essaddam (2012), Beltratti and Paladino (2013), and Asimakopoulos and Athanasoglou (2013) for reference the usage of stock analysis to analyze performance of banks following merger and acquisition.
[7] See Altunbas and Marques (2008), Rezitis (2008), Bernad, et al. (2010), Egger and Hahn (2010), Behr and Heid (2011), and Halkos and Tzeremes (2013) for reference the usage of accounting analysis to analyze performance of banks following merger and acquisition.

The present study is proposed to analyze the impact of merger and acquisition on bidder bank performance. Performance changes are measured by accounting data through the comparison of return on equity between pre- and post- M&As. Additionally the source of changes in performance is analyzed using five indicators, including earning diversification, cost inefficiency, asset impairment, capital adequacy, and liquidity risk. Besides accounting data, bidder bank performance is also analyzed using the event study method to calculate cumulative abnormal returns of stock around the announcement and completion of M&A. Deeper analysis is conducted to examine the difference between domestic versus cross border acquisition and between acquiring listed target versus non-listed target. The present study is expected to give contribution to broaden the knowledge about the impact of merger and acquisition in the banking sector.

The rest of the thesis is structured as follows. Chapter 2 includes a review of the relevant literature. Chapter 3 describes the hypotheses. Chapter 4 discusses research method. Chapter 5 provides information about data samples used to conduct the analysis. Chapter 6 explains the empirical results. The last chapter presents the conclusion, limitations of the study and suggestion for further research.

2. Literature Review

2.1. Concepts of Merger and Acquisition

2.1.1. Forms of Merger and Acquisition

There are three forms of merger and acquisition, which are merger or consolidation, acquisition of shares, and acquisition of assets. Merger is the form of absorption of one firm (target) by another firm (bidder). The bidders take over all the assets and liabilities of the target firms. After the merger, the target firms do not exist anymore as a separate firm. Consolidation is forming of new firms derived from two or more firms. The firms that join in consolidation end their existence and become part of a new firm. Acquisition of shares is the buying of the target firm's voting shares. Acquisition of assets is the buying of all assets of target firm. Target firms continue to exist after acquisition of shares or acquisition of assets (Hillier, et al., 2010).

2.1.2. Categorization of Merger and Acquisition

Merger and acquisitions can happen in three types, which are horizontal acquisitions, vertical acquisitions, and conglomerate acquisitions. Horizontal acquisition happens if both bidder and target companies are in the same industry (Hillier, et al., 2010). Most of banking merger and acquisition are included in this type. Vertical acquisition involves firms at different steps of the production process (Hillier, et al., 2010), often between supplier and customer firms, or firms with their distributors. Conglomerate acquisition happens when bidder and target firms are not related to each other (Hillier, et al., 2010).

Additionally, merger and acquisition transaction can be categorized geographically, namely domestic merger and acquisition and cross-border merger and acquisition. The domestic acquisition includes bidder and target firms operating in the same home country, while cross-border acquisition happened between bidder and target firms in different countries (UNCTAD, 2000).

There are three forms of payment in merger and acquisition transaction, which are cash, stock, and debt. If the primary form of payment is debt or cash, the merger and acquisition transaction will increase the financial leverage of the bidder, which reduces shareholder value for the bidder by increasing the risk of financial distress, but on the other hand the payment using debt will lower the tax by increasing tax shield (Palepu, et al., 2013).

2.1.3. Theory About Merger and Acquisition

There are some theories that are used to explain the reason of firm to engage in merger and acquisition. The first theory is market power theory. "Market power is potential of a market participant or group of participants (persons, firms, partnership, or others) to influence price, quality and the nature of the product in the market place. In turn, market power can lead to un-competitively high and risk-free profits" (Montgomery, 1985). Based on the market power theory, merger and acquisition will result in a reducing the number of banks and shrinking of competition, which lead to higher market concentration and increase market power of the banking sector. This will enable banks to increase price within the market and gain excess profit. Based on this reason, merger and acquisition is expected to improve performance of both targets and bidders (Hankir, et al., 2011).

The second theory is resource theory or synergy theory. Based on synergy theory, it is said that "the amount of economic value that will result from a merger will depend on the amount of the resource held by the firm, relative to total amount present in the economy, and availability of opportunities to use this resource" (Chatterjee, 1986). Merger and acquisition is expected to raise future cash flow and increase firm value by synergy in operating and financing either due to increase economic of scale by enlarging the firm size, or due to increase economic of scope as a result of specific combination advantage between the merged firms. The synergy comes from revenue increases as a result of cross selling or up selling, cost reduction as a result of efficiency gains, and benefits of new opportunities in tax saving. Under this theory, performance of both targets and bidders is expected to improve (Hankir, et al., 2011).

The third theory is agency theory. Agency theory argued that "managers have incentives to cause their firms to grow beyond their size. Growth increases managers' power by increasing the resources under their control. It is also associated with increases in managers' compensation, because changes in compensation are positively related to the growth in sales" (Jensen, 1986). Based on agency theory, management of bidder banks involves in merger and acquisition for personal benefit without considering the economic reason (Asimakopoulos & Athanasoglou, 2013). Similar to agency theory is hubris theory. Based on the hubris theory, management of bidder banks is paying a relatively high price because they are too confident with their ability to recognize the undervalued target banks (Asimakopoulos & Athanasoglou, 2013). Under agency theory and hubris theory, performance of bidders is expected to decrease (Hankir, et al., 2011).

The fourth theory is information asymmetry theory. Based on information asymmetry, merger and acquisition gives negative impact to stock return because the announcement signal to the market that firm's stock is overvalued (Moeller, et al., 2007). Under information asymmetry theory, performance of bidders is expected to decrease.

2.1.4. Motives of Merger and Acquisition

There are many reasons firms engage in merger and acquisition. The first motive is revenue enhancement. Revenue enhancement happened in marketing gains, strategy benefits and market or monopoly power. Marketing gains are expected to increase operating revenues. Market or monopoly power will give monopoly profits to the firm but reducing the competition in the industry (Hillier, et al., 2010).

Additionally, firms engage in merger and acquisition to lower the cost. Cost reduction can increase operating efficiency of the merged firms in some ways, including economies of scale, economies of vertical integration, technology transfer, complementary resources, and removal of inefficient management. Economies of scale happened when merged firm is more efficient than target and bidder firms (Palepu, et al., 2013). Economies of scale are the benefit of horizontal mergers by sharing some resources which will decrease the average cost of production as the increase level of production. Economies of vertical integration happened by making coherence of closely related operating activities easier (Hillier, et al., 2010).

Another motive of merger and acquisition is to improve target management. This happens if management of bidder firm assumes that the target has systematically underperformed in the industry (Palepu, et al., 2013).

The next benefits are combining complementary resources. Capturing tax benefits, providing low-cost financing to a financially constrained target, creating value through restructuring and break-ups, and increasing product market rents are also considered as the benefit of doing merger and acquisition (Palepu, et al., 2013). Tax benefit comes from the use of tax losses, the use of unused debt capacity, and the use of surplus funds. Firm transfers the loss in one division to another division to get a lower tax bill. Also, when a target firm has too little debt, bidder firm can use target to optimize debt. Additionally, the firm can use surplus funds to pay dividends or buy back shares (Hillier, et al., 2010).

Banks engage in merger and acquisition to lower operating cost by cutting down staff overhead, merge branch networks, and integrating information technology and risk management system. Additionally, bidder banks acquire another bank to increase firm size to expand capital base, raise competitive position, and take advantage of market power (Asimakopoulos & Athanasoglou, 2013). Beside economies of scale, economies of scope are another motive for banks to involve in merger and acquisition. The purpose is to take benefits from up-selling and cross-selling products and use combination of existing networks (Asimakopoulos & Athanasoglou, 2013).

2.1.5. Determinants of Merger and Acquisition

There are some factors that determine the likelihood of a bank to involve in merger and acquisition. Target bank has characteristics of lower return on asset, higher capital level, higher non-performing loans, lower market-to-book ratio, higher core deposit ratio, higher loan concentration (Akhigbe, et al., 2004), higher cost to income, or poorly managed (Hernando, et al., 2009), less profitable (Hannan &

Pilloff, 2007; Pasiouras, 2011), lower growth prospects (Pasiouras, 2011), and lower capitalization (Goddard, et al., 2009). In cross-border acquisition, target bank usually large, bad performers in small country with concentrated banking sector (Correa, 2009). Meanwhile, bidder bank is usually larger, more efficient (Pasiouras, 2011; Beccalli and Frantz, 2013), higher growth (Beccalli & Frantz, 2013), more profitable and less liquid (Caiazza, et al., 2014).

2.2. Empirical Studies about Impact of Bank Merger and Acquisition

2.2.1. Methodology Used to Analyze the Impact of Bank Merger and Acquisition

Two main methods are commonly used in the literature to analyze the impact of merger and acquisition on bank performance. One examines efficiency and profitability improvements of merged banks using accounting indicators, while the other examines the stock price of merged banks (Chronopoulos, et al., 2013; Tsangarakis, et al., 2013). The accounting method consists of a comparison of financial ratios before and after the merger and acquisition (Chronopoulos, et al., 2013). The second method assumes that changes in stock return of the banks that involved in merger and acquisition represent the present value of future expected gains resulting from merger and acquisition. An implicit assumption is that the capital market is efficient (Chronopoulos, et al., 2013). To get a clear understanding about the impact of merger and acquisition to firm performance, two methods should be conducted together because the two methods are complementary not substitute. Stock price analysis may fail to detect that unprofitable mergers occur, while accounting analysis may not be able to identify the reason of unprofitable mergers (Fridolfsson & Stennek, 2005).

2.2.2. Impact of Bank Merger and Acquisition on Stock Performance

The researches that using stock method presents various results for bidders' bank returns. Tsangarakis, et al. (2013) examined a sample of 172 companies in the European financial industry sector from 2000 to 2006 and found that bidders experience statistically insignificant abnormal returns. Further, the study shows that bidders in large deals, with a value above $0.5bn, increase in returns significantly in almost all event window around announcement date, which are (-15,1), (-10,10), (-5,5), (-2,2), (-1,1), and (-1,0), meanwhile bidders in small deals, with a value below $0.5bn, increase return significantly only for announcement day with 0.71% abnormal return. This result shows that market perception of deal values in merger and acquisition of financial institutions is influenced a lot by the size of the deals. From the listed status of target, bidders of listed target earn statistically significant negative abnormal return ranging from -2.41% to -1.03%, meanwhile bidders bid for subsidiary target experience statistically significant positive abnormal return at 0.45% on announcement date, and bidders bid for non-listed target experience statistically significant positive abnormal return ranging from 1.38% to 1.81%. The reason possibly because bidder shareholders may expect to earn higher abnormal return when bidding unlisted targets, lower abnormal returns when bidding subsidiaries, and predict losses when bidding listed targets (Tsangarakis, et al., 2013).

Goddard, et al. (2012) examined a sample of 132 merger and acquisitions involving banks in Asia and Latin America from 1998 to 2009 and found that bidder firms tend not to experience loss of value in cross-border transactions and bidder firms create shareholder value in merger and acquisitions involving large banks possibly because preference of the market for large banking sector consolidation and reflection of a too-big-to-fail effect in emerging markets.

Dimitris, et al. (2013) examined a sample of 135 deals in the US and European banking sector from 1997 to 2003 and found that acquiring banks involved in US deals experience statistically significant value-destroying around the announcement date of merger from -2.56% to -2.68%, meanwhile European bidders experience positive and statistically significant abnormal return of 1.99% over the 11-day window. The value destroying of US bidder is possibly due to market power and managerial motives of the bidder banks, meanwhile positive abnormal return for European bidder possibly because bank managers in Europe offer lower premium. The result is consistent with Hagendorff, et al. (2008) who find that US bidder bank realize negative abnormal returns over all event windows, meanwhile European bidders experience positive and statistically significant abnormal return over the 1-day, 3-day, and 5-day event window.

2.2.3. Impact of Bank Merger and Acquisition on Accounting Performance

Studies using an accounting approach to assess performance of bank mergers typically find different results. Goddard, et al. (2012) examined a sample of 132 merger and acquisitions involving banks in Asia and Latin America from 1998 to 2009. The research found that bidder banks benefit in acquiring unprofitable target, possibly due to the relative cheap asset of targets and bidders also benefit from non-cash deal because cash acquisitions are generally more costly. Cross border merger and acquisition is value creating for bidders in emerging markets.

Al-Khasawneh and Essaddam (2012) examined a sample of 309 bank mergers in the US from 1992 to 2003 and find that merger between low efficiency bidder and target creates significant market returns after the merger and acquisition, while mergers combining the least efficient bidders with moderately efficient targets

diminish bidder's value. Furthermore, technical efficiency and geographic diversification of bidders gives a positive impact to bidder's value. The cross border acquisition gives more opportunity for bidders to get access and better manage new market, and invest the new resources acquired from targets.

Asimakopoulos and Athanasoglou (2013) examined a sample of 170 bidder banks in the European Union from 1990 to 2004 and find that bidder that acquiring a low liquidity, low efficiency, and higher credit risk target provides less value creation for bidders probably because of higher cost of the deals, meanwhile bidders that acquiring targets with the lower earning diversification experience more positive impact to bidders' value.

3. Hypotheses

Based on theory and evidence, several hypotheses are developed related to the impact of merger and acquisition on bidder performance in the banking sector.

One of the motives of merger and acquisitions between banks is cutting operating cost down. This could be happened by incorporation of branch networks, reducing the cost of staffing, and combining the information technology and risk management system (Asimakopoulos & Athanasoglou, 2013).

According to synergy hypothesis, financing and operating synergies between the merging companies will increase the company value that results in cash flow enhancement and efficiency increase. This is due to the cross-selling and up-selling product from the existing distributor networks and tax savings (Asimakopoulos & Athanasoglou, 2013; Hankir, et al., 2011).

According to hubris hypothesis, management of the bidder company estimates that the value of the target company in the stock market is lower than the true value of the target company. For this reason, bidder companies pay too higher price which could lead to the decrease value of bidder firm (Asimakopoulos & Athanasoglou, 2013). However, it is difficult to assess whether management of bidder companies are too confident or have valuable information that help them to estimate the undervalued of target firm.

The goal of the company is maximizing shareholder's value by maximizing stock price of the firm (Asimakopoulos & Athanasoglou, 2013). Changes in stock price, either increase or decrease, are influenced by any news released by the company. This also applies to any announcement of merger and acquisition between banks that raise reaction from the financial market.

Additionally, merger and acquisition can be viewed as a sign that the bidder company has a good financial condition because management will only deal with an acquisition if the financial condition of the company is able to finance the acquisition and consolidation process (Beltratti & Paladino, 2013). Therefore, merger and acquisition should give positive effect to bidder performance.

H1: Bidder performance should increase following merger and acquisition in the banking sector.

The preferences of investors in the financial market to buy, sell, or hold the stock is the reason of the stock price change. Investors' preferences are influenced by the information they have to analyze the future stock performance of the company. The more information they have, the better decision should be made. Conversely, lack of information could lead to information asymmetry that can result in inappropriate decision.

Companies that are listed in the stock market generally give more information than non-listed companies. Same thing applies to the banking sector. The listed bank provides more information than non-listed banks that lead to reduction of information asymmetry. Destroying value for bidder banks that acquire non-listed target compares to acquiring a listed target indicates the importance of market as monitoring party and the impact of information disclosure to the value creation of banks involved in merger and acquisition (Asimakopoulos & Athanasoglou, 2013).

H2: There is a positive impact of bidder performance on acquiring a listed target compare to non-listed target in the banking sector.

According to synergy hypothesis, the benefits of acquiring the target firm are gaining a patent on the technology developed by the target firm, getting experienced staff, and finding

other resources (Rani, et al., 2014). Cross border merger and acquisition direct the bidder company to find sources that are not available in the domestic market. These sources may increase cost efficiency, enhance revenue, and broader opportunities for bidder companies to grow by providing greater access to customers, reduce risk and costs by diversifying the sources and revenue, increase efficiency in business operations in overseas markets and overcome obstacles in the domestic market (Asimakopoulos & Athanasoglou, 2013; Bertrand & Betschinger, 2012).

However, based on information asymmetry hypothesis, the cross-border acquisition provides a high risk of asymmetric information. Therefore, the cross-border acquisition is often lower the value of the company (Asimakopoulos & Athanasoglou, 2013; Nicholson & Salaber, 2013).

Additionally, cultural barriers such as language differences, political and economic system become one of the reasons of the negative impact of cross-border acquisition on company's performance (Rani, et al., 2014). Cultural differences between two countries could trigger a cultural conflict within companies that lead to the merger process time-consuming and increases the cost of acquisition. Cross-border acquisition will lead to negative impact to bidder companies (Asimakopoulos & Athanasoglou, 2013; Nicholson & Salaber, 2013), include banking sector.

Acquisition of domestic banks leads to increase efficiency by reducing the cost required to manage subsidiary in the foreign country from distant places (Correa, 2008). Additionally, domestic acquisition gives positive influence compare to cross-border acquisition as domestic acquisition reduces the uncertainty information (Beltratti & Paladino, 2013).

According to market power hypothesis, the increase of concentration in domestic market by consolidation of banks, like merger and acquisition, may increase the market

power of the banks that reduce the level of competition and may increase the performance of acquirer bank by setting higher prices of service and increase bargaining power to suppliers (De Guevara, et al, 2005; Roller, et al., 2001).

H3: There is a positive impact of domestic merger on bidder performance in the banking sector.

4. Research Methodology

In the present study, there are two methods used to measure performance of bank M&A. The first method is used to measure stock performance by examining the stock price reaction to the announcement of M&A using event study methodology. The other approach is used to measure accounting performance of firms involving in M&A using financial ratios.

4.1. Method to Measure Stock Performance

To measure the impact of merger and acquisition to stock performance, the present study uses event study methods which are commonly used in literature (Asimakopoulos & Athanasoglou, 2013; Tsangarakis, et al., 2013; Chronopoulos, et al., 2013; Beltratti & Paladino, 2013; Goddard, et al., 2012; Lensink & Maslennikova, 2008). To assess whether price changes are significant or not, a market model is chosen, as most commonly used in relevant literature. The relationship between expected return of stocks and market portfolio is shown in equation (1)

$$R_{it} = a_i + b_i R_{mt} + e_{it} \quad (1)$$

where: R_{it} is the realized return of stock i at time t (in days)[8]

R_{mt} is the return of market portfolio m at time t (in days)[9]

a_i and b_i are coefficients of the model

e_{it} is statistical error term with expected value $E(e_{it}) = 0$

[8] All returns in the present study are calculated as the difference between share prices at time t and share price at time t-1, divided by share price at time t-1.

[9] Return of market portfolio is the difference between stock market index at time t and stock market index at time t-1, divided by stock market index at time t-1. Stock market index are collected from Stoxx database.

The a_i and b_i coefficients will be performed using Ordinary least Square (OLS) regression method for the period between 252 and 21 trading days before announcement date (Asimakopoulos & Athanasoglou, 2013). OLS regression method also performed for the same period before completion date.

The estimated coefficient a_i and b_i in equation (1) are used to calculate the expected return for each share shown in equation (2).

$$\check{R}_{it} = a_i + b_i R_{mt} \quad (2)$$

where: $\check{R}_{it}$ is the expected return of stock i at time t (in days)

R_{mt} is the return of market portfolio m at time t (in days)

a_i and b_i are coefficients of the model obtained from OLS regression

Then, abnormal return is calculated as the difference between the realized return and expected return during the period. Abnormal return of each stock is calculated using equation (3)

$$AR_{it} = R_{it} - \check{R}_{it} \quad (3)$$

where: AR_{it} is the abnormal return of stock i at time t (in days)

R_{it} is the realized return of stock i at time t (in days)

$\check{R}_{it}$ is the expected return of stock i at time t (in days)

Afterwards, computed values of abnormal returns for each firm are aggregated. For each event window, calculated abnormal returns are accumulated across firms using equation (4)

$$AR_t = \frac{1}{N} \sum_{j=1}^{N} AR_{it} \quad (4)$$

where: AR_t is aggregate abnormal return at time t (in days)

N is number of banks under examination

AR_{it} is abnormal return of stock i at time t (in days)

To analyze ongoing impact of an event on stock prices, average abnormal returns must be aggregated through time with equation (5)

$$CAR_{[t1,t2]} = \sum_{t=t1}^{t2} AR_t \quad (5)$$

where: $CAR_{[t1,t2]}$ is cumulative abnormal return for period [t1, t2]

AR_t is aggregate abnormal return at time t (in days)

The next step is to conduct t-test to examine whether cumulative abnormal return is statistically significant different from zero.

The t-test for cumulative abnormal return is obtained as the mean CAR divided by its estimated standard deviation (Filson & Olfati, 2014) as presented in equation (6)

$$t = \frac{CAR_{[t1,t2]}}{SD(CAR_{[t1,t2]})} \quad (6)$$

where: $CAR_{[t1,t2]}$ is cumulative abnormal return for period [t1, t2]

$SD(CAR_{[t1,t2]})$ is standard deviation of CAR from the estimation period

4.2. Method to Measure Accounting Performance

To examine the impact of M&A on accounting performance, several financial ratios are used to compare asset, revenue, and liability of bidder and target firms pre- and post- M&A transaction (Kalra, et al., 2013). Financial ratios of each firm are collected two years pre- and two years post- M&A which cover the period 2006 through 2012. Two years' time window is selected for some reasons, including the effect of other economic factors could distort the result for longer time span and sample size shrink significantly particularly for cross-border mergers (Altunbas & Marques, 2008).

Accounting performance measured by ROE is also used by some literature (Hagendorff & Nieto, 2013; Altunbas & Marques, 2008; Knapp, et al., 2006). Change of performance is measured as the difference between two-year average and median return on equity (ROE) of bidder banks after the acquisition and two-year average and median return on equity (ROE) of bidder banks before the acquisition. Changes pre-acquisition and post-acquisition performances are examined on industry-adjusted basis. Industry adjusted comparison is used to assess performance of bidder banks that involves in merger and acquisition without taking into account industry characteristic that may influence performance of merged banks. This is conducted because there is a possibility that changes in bidder banks' performance may happen because of other factors aside from merger and acquisition (Ismail, et al., 2009; Cornett, et al., 2006). Industry-adjusted is calculated as the average and median difference between financial ratio changes in merged bank and the average and median financial ratio

changes of the banking industry[10] in accordance with the country of each sample merged bank (Ismail, et al., 2009).

Additionally, several financial ratios are used to determine the cause of changes of the bidder banks performance following the merger and acquisition. To recognize the source of changes on performance of bidder banks, five bank performance indicators are used, including earning diversification, cost inefficiency, asset impairment, capital adequacy, and liquidity risk (Altunbas & Marques, 2008; Cornett, et al., 2006).

Earnings diversification is a broad product strategy which measures the role of other sources of income to earnings that could be derived from potential new revenues, diversification, and access to new innovation. This could be measured by the ratio of other operating income to total asset (Altunbas & Marques, 2008).

Cost inefficiency measures cost controlling strategy by relating expenditure to return which measure by the ratio of cost to income (Ismail, et al., 2009; Altunbas & Marques, 2008).

Asset impairment measures bank's loan quality or credit risk of the bank. This is measured by the ratio of loan loss provision to net interest revenue (Ismail, et al., 2009; Altunbas & Marques, 2008).

Capital adequacy values bank strategy with regard to capital structure. This is measured by the ratio of equity to total asset (Cornett, et al., 2006; Altunbas & Marques, 2008).

Liquidity risk measures changes in cash position of the bank. This is measured by the ratio of net loans to total asset (Cornett, et al., 2006; Ismail, et al., 2009).

[10] The average and median financial ratio changes of the banking industry are calculated from peer analysis conducted in ORBIS database.

Table 1

Financial ratios used to analyze performance around bank M&A

Indicators	Ratio	Symbol
Earning Diversification	Other Operating Income to Total Asset	Div
Cost Inefficiency	Cost to Income	Cost
Asset Impairment	Loan Loss Provision to Net Interest Revenue	Prov
Capital Adequacy	Equity to Total Asset	Cap
Liquidity Risk	Net Loans to Total Asset	Liq

Then, multicollinearity test is conducted to examine whether there is a high correlation between independent variables in the model.

To examine the relationship between change in ROE and factors found significant in impacting the performance measure around bank merger, multivariate regression analysis is conducted. The following model is used for multivariate regression analysis.

$$\Delta ROE_i = a_0 + b_1\Delta Div_i + b_2\Delta Cost_i + b_3\Delta Prov_i + b_4\Delta Cap_i + b_5\Delta Liq_i + b_6List_i + b_7Dom_i$$

where:

ΔROE_i = change in the mean ROE for bidder banks before the acquisition (mean ROE for the years -2 and -1) to after acquisition (mean ROE for the years 1 and 2).

ΔDiv_i = change in other operating income to total assets for bidder banks in two years before versus two years after acquisition

$\Delta Cost_i$ = change in cost as a percentage of income for bidder banks in two years before versus two years after acquisition

$\Delta Prov_i$ = change in loan loss provision to net interest revenue for bidder banks in two years before versus two years after acquisition

ΔCap_i = change in equity as a percentage of total assets for bidder banks in two years before versus two years after acquisition

ΔLiq_i = change in net loans as a percentage of total assets for bidder banks in two years before versus two years after acquisition

$List_i$ = a dummy variable equal to 0 if the target bank is listed and 1 if the target bank is non-listed

Dom_i = a dummy variable equal to 0 if the acquisition type is domestic acquisition and 1 if the acquisition type is cross-border acquisition

Listing status of target bank (listed or non-listed) and type of acquisition (domestic or cross-border) are controlled for diversification effects

5. Data Sample

Data in the present study is collected mainly from Zephyr database. The selected sample includes completed merger and acquisition of banks worldwide with announcement date and completion date both from 2008 to 2010. The criteria used to extract the relevant M&A transaction data are merger and acquisition deal with both bidder and target firms are including in banking sectors. The M&A transaction has to give the bidder banks a majority stake in target firm, which means bidder's percentage of initial stake on target firms is less than 50% and bidder's percentage of final stake in target firm is more than 50% (Correa, 2009).

Merger and acquisition deals, announcement date, and completion date are extracted from Zephyr database. Merger and acquisition deals are using UK SIC 2007 classification code 64194 – Banks or NACE Rev.2 classification code 6419 – Other monetary intermediation (both classification generate exactly the same result). Zephyr database and NACE classification for other monetary intermediation are also used in the research by Bertrand and Betschinger (2012). This resulted in total 1,776 M&A deals include 1,469 domestic deals and 307 cross-border deals. The bidder and target are manually checked to make sure that both are included in the banking industry. This process reduced the sample to 459 domestic deals and 98 cross-border deals. Finally, the availability for announcement date and completion date, financial ratios used to measure accounting performance and historical data of daily share price are checked. This resulted in total 47 M&A deals, including 32 domestic deals and 15 cross-border deals, which involved 94 banks from 25 countries available for the samples. List of data sample of bank merger and acquisitions is presented in Appendix 1.

The financial ratios for each company involved in merger and acquisition that are used for analyzing accounting performance is collected from Orbis database. Data of the historical price of bidder stocks for analyzing stock performance is daily price data that are collected from yahoo finance (finance.yahoo.com) and google finance (www.google.com/finance). Data of the historical stock market index is also daily price data that are collected from Stoxx database (www.stoxx.com) which is adopted from the research by Beltratti and Paladino (2013). The time period of historical stock price data and historical stock market index are during 2007 to 2011.

6. Empirical Results

6.1. Stock Performance Analysis

One of the ways that is used by researchers to examine the impact of merger and acquisition on bidder performance is analyzing the abnormal return around the announcement date based on some model (Beltratti & Paladino, 2013; Asimakopoulos & Athanasoglou, 2013; Rani, et al., 2014; Bertrand & Betschinger, 2012; Hankir, et al., 2011). The present study focuses to measure cumulative abnormal return around announcement and completion of merger and acquisition. Completion of merger and acquisition is included in the analysis because a study by Beltratti and Paladino (2013) explain that there is a difference between market reaction around announcement and market reaction around completion during a crisis. As the data used in the present study are included the sample from 2008 to 2010 that can be considered as crisis period, then the analysis of both, market reaction around announcement and around completion of merger and acquisition, are important to be analyzed.

6.1.1. Analysis of CAR Around Announcement of Merger and Acquisition

Cumulative abnormal returns (CARs) at various event windows for bidder banks around announcement of merger and acquisition are reported in Table 2. The result shows that market does not give significant reaction to the announcement of merger and acquisition within banks. In most of examined event windows, the reaction of market is negative. As reported in table 2, market reaction at event window [-1, +1] and [+1, +2] are -2.970% and -0.391% respectively. The finding is in line with the research conducted by Asimakopoulos and Athanasoglou (2013) who

also found negative but not statistically significant cumulative abnormal returns for bidder banks in European market. The result is different compared to study by Rani, et al. (2014) who researched Indian banks and reported positive cumulative abnormal return for bidder banks.

Table 2

Cumulative abnormal returns of bidders around announcement date

Event Window	CAR for all data (N=47)	
	Mean	t
Pre Announcement Date		
CAR [-10, -5]	-0.294%	-.244
CAR [-2, -1]	0.698%	1.286
Event Date		
CAR [-2, +2]	-2.760%	-.922
CAR [-1, +1]	-2.970%	-1.073
Post Announcement Date		
CAR [+1, +2]	-0.391%	-.554
CAR [+1, +10]	-0.688%	-.372

In order to give further explanation, different sub samples are analyzed to identify potential differences regarding the impact of geographic diversification and the effect of listing status target. Table 3 and table 4 report the result for "domestic versus cross border acquisition" and table 5 and table 5 report the result of "acquisition of listed versus non-listed target".

From table 3, there is a positive market reaction at event window [-2,-1] for cross-border acquisition which is statistically significant at 10% level. It is also shown in table 4, a positive market reaction at event window [-2,-1] for acquiring non-listed target for cross-border acquisition which is statistically significant at 5% level. From table 4, there is also a negative market reaction at event window [+1, +10]

for acquiring non-listed target for cross border acquisition which is statistically significant at 10% level.

From table 6, there is a positive market reaction at event window [-10,-5] for domestic acquisition for acquiring listed target which is statistically significant at 5% level and statistically significant difference for domestic acquisition between acquiring listed target and acquiring non-listed target which is in domestic acquisition, acquiring listed target gives higher abnormal return significant at 5% level than non-listed acquisition.

Table 3

Cumulative abnormal returns of bidders for domestic acquisition and for cross-border acquisition around announcement date

Event Window	CAR for domestic acquisition (N=32)		CAR for cross-border acquisition (N=15)		CAR differences between domestic and CB	
	Mean	t	Mean	t	Mean	t
Pre-Announcement Date						
CAR [-10, -5]	-0.229%	-.135	-0.434%	-.360	-.00205	-.078
CAR [-2, -1]	0.368%	.505	**1.403%**	**2.022***	.01036	.887
Event Date						
CAR [-2, +2]	-4.467%	-1.025	0.884%	.862	.05352	.831
CAR [-1, +1]	-5.255%	-1.320	1.906%	1.554	.07160	1.213
Post-Announcement Date						
CAR [+1, +2]	-0.183%	-.190	-0.833%	-1.005	-.00649	-.426
CAR [+1, +10]	0.392%	.154	-2.993%	-1.497	-.03385	-.849

Note: * denote significance at the 10% level

Table 4

Cumulative abnormal returns for bidders of domestic acquisition and bidders of cross-border acquisition for acquiring listed target and acquiring non listed target around announcement date

Event Window	CAR for listed target (N=20)			CAR for non-listed target (N=27)		
	Domestic Acq (N=15)	Cross-Border Acq (N=5)	CAR differences	Domestic Acq (N=17)	Cross-Border Acq (N=10)	CAR differences
Pre-Announcement Date						
CAR [-10, -5]	**1.921***	-.737	1.498	-1.387	.119	-1.051
CAR [-2, -1]	.673	-.207	.437	.161	**2.273****	-1.155
Event Date						
CAR [-2, +2]	.912	.114	-.539	-.724	.897	-.662
CAR [-1, +1]	-1.419	1.387	-1.259	-.789	.888	-.745
Post-Announcement Date						
CAR [+1, +2]	-.515	-.924	.167	.333	-.554	.565
CAR [+1, +10]	.659	.390	.214	-.318	**-1.897***	.690

Note: * denote significance at the 10% level
** denote significance at the 5% level

Table 5

Cumulative abnormal returns of bidders acquiring listed target and bidders acquiring non-listed target around announcement date

Event Window	CAR for listed target (N=20)		CAR for non-listed target (N=27)		CAR differences between listed and non-listed target	
	Mean	t	Mean	t	Mean	t
Pre-Announcement Date						
CAR [-10, -5]	2.213%	1.441	-2.151%	-1.266	.04364	1.835*
CAR [-2, -1]	0.405%	.632	0.915%	1.109	-.00510	-.460
Event Date	Mean	t	Mean	T	Mean	t
CAR [-2, +2]	-2.449%	-.890	-2.989%	-.617	.00540	.088
CAR [-1, +1]	-3.013%	-1.083	-2.938%	-.667	-.00075	-.013
Post-Announcement Date	Mean	t	Mean	T	Mean	t
CAR [+1, +2]	-0.953%	-.766	0.026%	.031	-.00979	-.683
CAR [+1, +10]	1.893%	.738	-2.600%	-1.006	.04493	1.205

Note: * denote significance at the 10% level

Table 6

Cumulative abnormal returns of bidders acquiring listed target and bidders acquiring non-listed target for domestic acquisition and cross-border acquisition around announcement date

Event Window	CAR for domestic acquisition (N=32)			CAR for CB acquisition (N=15)		
	Listed target (N=15)	Non-listed target (N=17)	CAR differences	Listed target (N=5)	Non-listed target (N=10)	CAR differences
Pre-Announcement Date						
CAR [-10, -5]	**1.921***	-1.387	**2.194****	-.737	.119	-.701
CAR [-2, -1]	.673	.161	.258	-.207	**2.273****	-1.606
Event Date						
CAR [-2, +2]	-.912	-.714	.243	.114	.897	-.477
CAR [-1, +1]	-1.419	-.789	.058	1.387	.888	.595
Post-Announcement Date						
CAR [+1, +2]	-.515	.333	-.623	-.924	-.554	-.404
CAR [+1, +10]	.659	-.318	.666	.390	**-1.897***	1.436

Note: * denote significance at the 10% level
** denote significance at the 5% level

Summary

The analysis of CAR around announcement shows no statistically significant impact of merger and acquisition to stock performance of bidder banks. Further analysis shows that there is positive significant impact for acquiring domestic listed target before announcement date and significantly generate higher abnormal return than acquiring domestic non-listed target. The result is consistent with the result by Asimakopoulos and Athanasoglou (2013). The possible explanation is acquiring non listed target has a higher risk of information asymmetry than acquiring listed target which may not preferable by shareholders. However, as the positive result for acquiring domestic listed target only happen in one event window, it cannot be considered as a conclusion of the present study.

6.1.2. Analysis of CAR Around Completion of Merger and Acquisition

Cumulative abnormal returns (CARs) at various event windows of bidder banks around completion are reported in Table 7. The result shows that the market does not give a significant reaction to the completion of merger and acquisition within banks. In most of event windows, market reaction is negative. The finding contradicts with the research conducted by Beltratti and Paladino (2013) which found statistically significant positive abnormal returns for bidder banks in the European market around completion of merger and acquisition.

Table 7

Cumulative abnormal returns of bidders around completion date

Event Window	CAR for all data (N=47)	
	Mean	t
Pre-Completion Date		
CAR [-10, -5]	-1.28%	-1.176
CAR [-2, -1]	-0.12%	-0.254
Event Date		
CAR [-2, +2]	-0.99%	-0.609
CAR [-1, +1]	-1.47%	-1.068
Post-Completion Date		
CAR [+1, +2]	-0.40%	-0.559
CAR [+1, +10]	1.75%	1.208

In order to give further explanation, different sub samples are analyzed to identify potential differences regarding the impact of geographic diversification and the effect of listing status target. Table 8 and table 9 report the result for "domestic versus cross border acquisition" and table 10 and table 11 report the result of "acquisition of listed versus non-listed target".

From table 8, there is a negative market reaction at event window [-10,-5] for cross-border acquisition which is statistically significant at 10% level and also significant difference at 5% level between domestic acquisition and cross-border acquisition which means domestic acquisition gives higher abnormal return than cross-border acquisition. From table 9, there is a negative market reaction at event window [-10,-5] for acquiring listed cross-border target at 5% significant level.

Table 8

Cumulative abnormal returns of bidders for domestic acquisition and for cross-border acquisition around completion date

Event Window	CAR for domestic acquisition (N=32)		CAR for cross-border acquisition (N=15)		CAR differences between domestic and CB	
	Mean	t	Mean	t	Mean	t
Pre-Completion Date						
CAR [-10, -5]	.0018	.150	**-.0439**	**-2.044***	**-.04566**	**-2.019****
CAR [-2, -1]	-.0006	-.100	-.0026	-.292	-.00204	-.193
Event Date						
CAR [-2, +2]	-.0169	-.729	.0050	.409	.02197	.625
CAR [-1, +1]	-.0227	-1.156	.0025	.258	.02520	.851
Post-Completion Date						
CAR [+1, +2]	-.0077	-.794	.0038	.407	.01146	.737
CAR [+1, +10]	.0272	1.466	-.0032	-.144	-.03039	-.977

Note: * denote significance at the 10% level
** denote significance at the 5% level

Table 9

Cumulative abnormal returns of bidders of domestic acquisition and bidders of cross-border acquisition for acquiring listed target and acquiring non listed target around completion date

Event Window	CAR for listed target (N=20)			CAR for non-listed target (N=27)		
	Domestic Acq (N=15)	Cross-Border Acq (N=5)	CAR differences	Domestic Acq (N=17)	Cross-Border Acq (N=10)	CAR differences
Pre-Completion Date						
CAR [-10, -5]	-.315	**-3.253****	-.584	.961	-1.563	**2.166****
CAR [-2, -1]	-.620	.702	.925	1.153	-1.285	**1.848***
Event Date						
CAR [-2, +2]	-.828	.606	.686	.116	-.168	.162
CAR [-1, +1]	-1.128	-.202	.571	-.327	.519	-.472
Post-Completion Date						
CAR [+1, +2]	-1.110	.923	1.109	.887	-.360	.808
CAR [+1, +10]	1.137	.299	-.473	1.227	-.338	.875

Note: * denote significance at the 10% level
** denote significance at the 5% level

Table 10

Cumulative abnormal returns of bidders acquiring listed target and bidders acquiring non-listed target around completion date

Event Window	CAR for listed target (N=20)		CAR for non-listed target (N=27)		CAR differences between listed and non-listed target	
	Mean	t	Mean	t	Mean	t
Pre-Completion Date						
CAR [-10, -5]	-.0131	-.760	-.0126	-.881	-.00046	-0.021
CAR [-2, -1]	-.0018	-.180	-.0008	-.187	-.00097	-0.097
Event Date						
CAR [-2, +2]	-.0240	-.675	.0005	.047	-.02451	-0.741
CAR [-1, +1]	-.0326	-1.148	-.0014	-.123	-.03120	-1.125
Post-Completion Date						
CAR [+1, +2]	-.0117	-.742	.0016	.337	-.01330	-0.91
CAR [+1, +10]	.0350	1.185	.0046	.360	.03041	1.039

Table 11

Cumulative abnormal returns of bidders acquiring listed target and bidders acquiring non-listed target for domestic acquisition and cross-border acquisition around completion date

Event Window	CAR for domestic acquisition (N=32)			CAR for CB acquisition (N=15)		
	Listed target (N=15)	Non-listed target (N=17)	CAR differences	Listed target (N=5)	Non-listed target (N=10)	CAR differences
Pre-Completion Date						
CAR [-10, -5]	-.315	.961	.705	**-3.253****	-1.563	-.418
CAR [-2, -1]	-.620	1.153	1.044	.702	-1.285	-1.365
Event Date						
CAR [-2, +2]	-.828	.116	.860	.606	-.168	-.781
CAR [-1, +1]	-1.128	-.327	.925	-.202	.519	.467
Post-Completion Date						
CAR [+1, +2]	-1.110	.887	1.376	.923	-.360	-1.121
CAR [+1, +10]	1.137	1.227	-.805	.299	-.338	-.418

Note: * denote significance at the 10% level
** denote significance at the 5% level

Summary

The analysis of CAR around completion date shows no statistically significant impact of merger and acquisition to stock performance of bidder banks. Further analysis shows that cross-border acquisition reduces value. Shareholders possibly not prefer for cross-border acquisition because it increases the risk of portfolio. However, as the significant difference between domestic acquisition and cross-border acquisition only happen in one event window, it cannot be considered as a conclusion of the present study.

6.2. Accounting Performance Analysis

Table 12 presents descriptive statistics pre- M&A data for bidder banks. Descriptive statistics are calculated for the sample of banks in the year before the completion of merger and acquisition. According to panel A and panel B, bidder bank that are involved in merger and acquisition are performing higher than industry average in terms of mean and median ROE. Bidder bank has higher revenue enhancement. It is shown by the positive value of mean and median of other operating income/total asset of bidder bank industry adjusted. Bidder bank also has lower inefficiency cost, lower capital adequacy, and lower liquidity risk. It is shown by the negative value of mean and median of cost/income, equity/total asset, and net loan/total asset of bidder bank industry adjusted. This is consistent with previous researches that identify the bidder bank characteristic as more profitable and more efficient (Pasiouras, 2011; Beccalli & Frantz, 2013; Caiazza, et al., 2014).

Table 12

Descriptive statistics for bidder bank variables pre- M&A

Panel A: Bidder Bank

Variables	N	Mean	Median	Stdev	Min.	Max.
Return On Equity	47	10.73	10.53	5.34	-17.49	46.24
Other Operating Income/Total Asset	47	1.58	1.20	0.82	0.10	8.42
Cost to Income	47	61.48	62.47	8.39	34.78	109.27
Loan Loss Provision/Net Intr. Rev.	45	16.35	11.67	20.11	-26.41	71.36
Equity/Total Asset	47	8.90	7.85	7.87	2.22	24.00
Net Loans/Total Asset	47	58.76	59.28	15.04	6.79	87.40

Panel B: Bidder Bank Industry Adjusted

Variables	N	Mean	Median	Stdev	Min.	Max.
Return On Equity	47	4.18	4.49	6.12	-19.70	27.29
Other Operating Income/Total Asset	47	0.72	0.36	0.66	-0.80	3.90
Cost to Income	47	-8.06	-6.98	9.16	-35.54	28.18
Loan Loss Provision/Net Intr. Rev.	45	1.61	-0.14	23.45	-25.78	52.36
Equity/Total Asset	47	-1.00	-0.99	7.64	-10.30	13.99
Net Loans/Total Asset	47	-7.60	-4.36	14.45	-63.55	18.24

Table 13 presents bank mean and median annual ROE for bidder banks in the years surrounding bank acquisition. The mean ROE for 47 banks is 12.99% and 10.73% in years -2 and -1 respectively before bank acquisition and 8.08% and 5.71% in years 1 and 2 respectively after bank acquisition. The resulting average performance over two years before acquisition versus two years after acquisition decreases from 11.86% to 6.90%. The difference, which is 4.96% is statistically significant different from zero at 1% level.

The mean industry ROE is 6.34% and 4.85% in years -2 and -1 respectively before acquisition and both are significant at 1% level. In the two years after bank acquisition, mean industry ROE is 5.15% and 5.64% in years 1 and 2 respectively

after bank acquisition. The resulting average industry performance over the two years pre- versus two years post- M&A decrease from 5.59% to 5.40%. The decrease in average industry performance, which is 0.20%, is not statistically significant.

The mean industry adjusted ROE is 6.65% and 5.88% in years -2 and -1 respectively before acquisition and both are significant at 1% level. In the two years after bank acquisition, mean industry adjusted ROE is 2.93% and 0.07% in years 1 and 2 respectively after bank acquisition. The resulting average industry adjusted performance over the two years pre- versus two years post- M&A decrease from 6.26% to 1.50%. The decrease in industry adjusted performance, which is 4.76%, is significant at 1% level.

The median ROE for 47 banks is 14.23% and 10.53% in years -2 and -1 respectively before bank acquisition and 7.46% and 8.08% in years 1 and 2 respectively after bank acquisition. The median resulting performance over two years pre- versus two years post- M&A decreases from 10.99% to 7.02%. The difference, which is 3.97% is statistically significant different from zero at 1% level.

The median industry ROE is 6.00% and 3.67% in years -2 and -1 respectively before acquisition and both are significant at 1% level. In the two years after bank acquisition, median industry ROE is 4.53% and 5.20% in years 1 and 2 respectively after bank acquisition. The resulting industry performance over the two years pre- versus two years post- M&A decrease from 5.40% to 4.87%. The decrease in industry performance, which is 0.53%, is not statistically significant.

The median industry adjusted ROE is 4.93% and 4.49% in years -2 and -1 respectively before acquisition and both are significant at 1% level. In the two years after bank acquisition, mean industry adjusted ROE is 2.26% and 1.85% in years 1 and 2 respectively after bank acquisition. The resulting industry adjusted performance

over the two years pre- versus two years post- M&A decrease from 5.35% to 2.20%. The decrease in industry adjusted performance, which is 3.15%, is statistically significant at 1% level.

To prove whether there is negative impact of merger and acquisition to bidder bank performance, bidder banks data are compared with average of banking industry data. The mean and median ROE for bidder banks one and two years before and one and two years after the acquisition are significantly different with mean and median ROE for banking industry for each period. Mean and median performance of pre-merger and post-merger of bidder banks is also significantly different with mean and median performance of pre-merger and post-merger of banking industry. Although bidder banks and average industry are both experiencing loss in performance post-merger compare to pre-merger, there is statistically significant different at 1% level of the changes in performance between bidder banks and average banking industry. The bidder banks are experiencing higher reduction in performance compare to banking industry. In sum, it can be concluded that merger and acquisition give negative result on average in a significant performance changes for bidder banks. The loss of performance for bidder banks is higher than loss of performance for average banking industry. This result contradicts with the result of Cornett, et al. (2004) which reported that bank acquisition outperform industry significantly after the merger, and different with those of Ismail, et al. (2009) which found that post-merger returns are not due to the merger itself but continuation of bank performance during pre-merger period.

Table 13

Bidder bank and industry adjusted mean and median return on equity

Year Relative to Merger and Acquisition	Number of Obs.	Bidder Bank Mean (%)	Industry Mean (%)	Industry Adjusted	
				Mean (%)	Z-score
-2	47	12.99***	6.34***	6.65***	-5.154***
-1	47	10.73***	4.85***	5.88***	-4.476***
Mean performance of pre-merger for years -2 and -1		11.86***	5.59***	6.26***	-5.032***
1	47	8.08***	5.15***	2.93***	-3.598***
2	47	5.71**	5.64***	0.07	-3.074***
Mean performance of post-merger for years 1 and 2		6.90***	5.40***	1.50	-2.873***
ΔROE (Post – Pre)		-4.96***	-0.20	-4.76***	-3.513***

Year Relative to Merger and Acquisition	Number of Obs.	Bank Median (%)	Industry Median (%)	Industry Adjusted	
				Median (%)	Z-score
-2	47	14.23***	6.00***	4.93***	-5.143***
-1	47	10.53***	3.67***	4.49***	-3.757***
Median performance of pre-merger for years -2 and -1		10.99***	5.40***	5.35***	-4.603***
1	47	7.46***	4.53***	2.26**	-2.963***
2	47	8.08**	5.20***	1.85	-2.381**
Median performance of post-merger for years 1 and 2		7.02***	4.87***	2.20	-2.138**
ΔROE (Post – Pre)		-3.97***	-0.53	-3.15***	-3.445***

Notes:
* denote statistically significance at the 10% level
** denote statistically significance at the 5% level
*** denote statistically significance at the 1% level

The changes in return on equity in post-merger period can be attributed to various reasons and arise from different sources. To conduct the investigation, financial ratios are examined to evaluate various areas of bank performance. Financial ratios are measured as the difference between average of median of two years after M&A and average of median of two years before M&A. The changes in pre- and

post- M&A values are examined on industry adjusted basis. The results are reported in table 14.

From table 14, there are statistically significant differences between pre- and post- M&A for most indicators. Earning diversification significantly decreases at 0.24% from 0.79% before M&A to 0.55% after M&A. Meanwhile, cost inefficiency increases significantly at 4.45% from -8.36% to -3.91% following the merger and acquisition. Besides cost inefficiency, asset impairment also increases significantly at 8.15% from 0.78% before M&A to 8.92% after M&A. Additionally, liquidity risk also increases at 1.76% from -6.94% to 5.18%. Capital adequacy does not change significantly following the merger and acquisition.

Table 14

Comparison of industry adjusted performance and bidder banks between median indicators of pre- and post- M&A for period 2008-2010

Indicator	**Ratio**	**Industry Adjusted Value**		
		Pre-M&A	Post-M&A	Difference
Earning Diversification	Other Operating Income to Total Asset	0.79***	0.55***	-0.24***
Cost Inefficiency	Cost to Income	-8.36***	-3.91**	4.45***
Asset Impairment	Loan Loss Provision to Net Interest Revenue	0.78	8.92***	8.15***
Capital Adequacy	Equity to Total Assets	-1.23*	-1.19**	0.04
Liquidity Risk	Net Loans to Total Assets	-6.94***	-5.18**	1.76**

Notes:
* denote statistically significance at the 10% level
** denote statistically significance at the 5% level
*** denote statistically significance at the 1% level

Table 15 presents the results for regression analysis. From panel A, it is shown that there is statistically significant positive relationship between the change in

earning diversification and the change in bank performance. Change in capital adequacy and acquiring non-listed target also gives significant positive impact to change in bank performance. Otherwise, change in cost to income, change in loan loss provision to interest revenue, and change in net loans to total asset significantly give negative impact to bank performance. Meanwhile, acquisition type does not give significant impact to bank performance.

In panel B of table 15, split the sample based on target bank listing status change the impact of relationship between change in earning diversification and change in bank performance. Although relationship between change in earning diversification and change in bank performance remain positive, change in earning diversification fails to show significant impact to the change in bank performance for both, listed and non-listed target. Further, change in cost inefficiency also fails to show significant impact to change in bank performance for acquiring listed target. Additionally for non-listed target, change in capital adequacy and change in liquidity risk also fail to show significant impact to change in bank performance.

In panel C of table 15, split the sample based on acquisition type reveal the different impact of domestic acquisition versus cross-border acquisition to bank performance. For domestic acquisition, earning diversification give significantly positive impact to bank performance, whereas for cross-border acquisition, there is a negative relationship between earning diversification and bank performance although the impact is not significant. Additionally, for domestic acquisition, change in capital adequacy fails to show significant impact to the change in bank performance. Meanwhile for cross-border acquisition, most of indicators fail to show significant impact to the change in bank performance. The reason is the data sample used in regression analysis is too small. It can be seen from the insignificance of F-value.

Table 15

Regression results for roe changes around bank M&A during 2008-2010

Panel A : Full Sample Results

Variables	Number of observations	Model 1		Model 2	
		Coefficient	t-statistic	Coefficient	t-statistic
Intercept		-.370	-.303	-.317	-.386
ΔDiv	47	2.116	2.053**	2.122	2.020**
ΔCost	47	-.245	-3.653***	-.224	-3.257***
ΔProv	45	-.348	-8.951***	-.357	-9.232***
ΔCap	47	.229	1.963*	.243	2.037**
ΔLiq	47	-.785	-3.103***	-.715	-2.786**
List	47	-2.631	-1.981*		
Dom	47	1.792	1.229		
Adjusted R-Squared		.766		.749	
F-value		22.544***		28.457***	

Panel B : Based on Target Bank Listing Status

Variables	Listed Target			Non-listed Target		
	N	Coefficient	t-statistic	N	Coefficient	t-statistic
Intercept		-2.275	-1.474		.092	.085
ΔDiv	20	.224	.087	27	1.388	1.004
ΔCost	20	-.180	-1.470	27	-.226	-1.889*
ΔProv	19	-.372	-7.221***	26	-.276	-3.711***
ΔCap	20	.478	1.904*	27	.188	1.110
ΔLiq	20	-1.079	-2.494**	27	-.390	-1.103
Adjusted R-Squared		.853			.442	
F-value		23.018***			5.117***	

Panel C : Based on Acquisition Type

Variables	Domestic			Cross-Border		
	N	Coefficient	t-statistic	N	Coefficient	t-statistic
Intercept		.977	.937		-1.147	-.585
ΔDiv	32	3.446	2.984***	15	-1.038	-.327
ΔCost	32	-.185	-2.545**	15	-.358	-2.099*
ΔProv	32	-.394	-10.212***	13	-.426	-1.590
ΔCap	32	.126	.945	15	.291	1.008
ΔLiq	32	-.805	-3.258***	15	-.944	-.737
Adjusted R-Squared		.834			.289	
F-value		32.149***			2.136	

Notes:
* denote statistically significance at the 10% level
** denote statistically significance at the 5% level
*** denote statistically significance at the 1% level

7. Conclusion

The present study examines the effect of merger and acquisition within banking sector, whether mergers and acquisitions give positive impact, negative impact, or no impact to bidder bank performance. The study also identified the source of performance changes from accounting point of view. Further analysis attempt to identify the difference between domestic mergers and acquisitions versus cross-border mergers and acquisition, and acquiring listed target versus acquiring non-listed target.

There are two approaches used to analyze the impact of mergers and acquisitions on the bank performance. First, stock analysis is used to analyze the abnormal returns around the announcement and completion of M&As. Second, accounting analysis is used to analyze the change in performance by comparing performance of bidder banks before and after the mergers and acquisitions. Additionally, the source of performance change is identified by performing regression analysis of some financial ratios that is predicted to influence the performance of banks. Because the limited access to specific M&A database, the data is collected from many sources including Zephyr database, Orbis database, Stoxx database, yahoo finance (finance.yahoo.com), and google finance (www.google.com/finance). The final sample consists of 47 mergers and acquisitions during the period 2008 to 2010.

The result of present study shows a negative impact of merger and acquisition to bidder bank performance. Based on stock performance analysis using event study methodology, it is concluded that merger and acquisition within banks results in negative but not significant return on stock price for bidder banks on the day around the announcement and completion of merger and acquisition. The result is consistent with the research presented by Asimakopoulos and Athanasoglou (2013) but contradicts that of Rani, et al. (2014). The diversification between domestic acquisition versus cross-border acquisitions and between

acquiring listed target versus non-listed target also does not provide changes to the significance of result.

Meanwhile, accounting performance analysis shows a statistically significant negative impact of merger and acquisition to bidder bank performance. Return on equity of bidder banks decrease significantly compares to return on equity before the merger and acquisition. The result is consistent with the research presented by Bertrand and Betschinger (2012) but contradicts that of Fields, et al. (2007). Deeper analysis shows that the performance decline of bidder bank is higher than value decline in average banking industry. The performance of bidder banks decrease because of the decrease in revenue enhancement, increase in cost inefficiency, increase in asset impairment, and increase in liquidity risk.

In sum, the answer to main research question is merger and acquisition gives negative impact to the performance of bidder banks. The stock analysis shows negative but not significant impact of bidder bank performance, meanwhile the accounting analysis results in statistically significant negative impact of bidder bank performance following mergers and acquisitions. The performance of bidder banks decrease because of the decrease in revenue enhancement, increase in cost inefficiency, increase in asset impairment, and increase in liquidity risk.

The debate of bidder bank performance following mergers and acquisitions is continuous. To get a clear understanding, there is need for more study at the country level to investigate whether there is a difference of impact between countries. External factor of firms, such as macroeconomic factors and regulations could also be considered to investigate the impact to the performance of bidder banks following mergers and acquisitions. It also remains for future research to examine the impact of mergers and acquisitions to other indicators, such as bondholder value, employee performance, and overall performance of banking industry.

The present study has several limitations to be considered. First, the sample data used in the present study is relative small. Additionally, the database used in the present study is not the database that specialized summarize the data for mergers and acquisitions. The data is collected from many resources as there is no access to special database for mergers and acquisitions.

Appendices

Appendix 1

List of Data Sample of Bank Merger and Acquisitions between 2008 to 2010

No	Announcement Date	Completion Date	Bidder Country	Bidder Name	Target Country	Target Name
1	21-Aug-09	1-Mar-10	Argentina	Banco Santander Río SA	Argentina	BNP Paribas Argentina
2	8-Oct-08	19-Dec-08	Australia	Commonwealth Bank of Australia Ltd	Australia	Bank of Western Australia Ltd
3	13-May-08	1-Dec-08	Australia	Westpac Banking Corporation	Australia	St George Bank Ltd
4	20-Mar-08	1-Jul-08	Belgium	KBC Groep NV	Slovakia	Istrobanka AS
5	30-May-08	30-Sep-08	China	China Merchants Bank Co., Ltd	Hong Kong	Wing Lung Bank Ltd
6	8-May-09	23-Oct-09	China	China CITIC Bank Corporation Ltd	Hong Kong	CITIC International Financial Holdings Ltd
7	26-Jun-08	3-Nov-08	Cyprus	Bank of Cyprus Public Company Ltd	Russia	Kommercheskii Bank Yuniastrum Bank OOO
8	26-Jan-09	2-Jun-09	Germany	Oldenburgische Landesbank AG	Germany	Allianz Banking Deutschland
9	14-Apr-08	14-Apr-10	Germany	Raiffeisenbank Wangen	Switzerland	Raiffeisenbank Kappel-Boningen-Gunzgen
10	10-Nov-09	5-Jan-10	Denmark	Nordjyske Bank A/S	Denmark	Øster Brønderslev Sparekasse
11	21-Jan-08	27-Mar-08	Denmark	Sydbank A/S	Denmark	bankTrelleborg A/S
12	16-Feb-09	27-Mar-09	Finland	Ålandsbanken Abp	Sweden	Kaupthing Sverige AB
13	13-Oct-08	19-Jan-09	United Kingdom	Lloyds Banking Group plc	United Kingdom	HBOS plc
14	27-Mar-08	30-Jun-08	Greece	Alpha Bank AE	Ukraine	Astra Bank

						VAT
15	4-Jun-09	28-Jan-10	Hong Kong	Bank of East Asia Ltd	Virgin Islands	ICEA Finance Holdings Ltd
16	25-Feb-08	9-Jun-08	India	HDFC Bank Ltd	India	Centurion Bank of Punjab Ltd
17	24-May-10	24-Aug-10	India	ICICI Bank Ltd	India	Bank of Rajasthan Ltd
18	1-Jul-08	22-Dec-08	Italy	Banca Popolare di Milano Scarl	Italy	Banca Popolare di Mantova SpA
19	28-Mar-08	28-Aug-08	Italy	Credito Emiliano SpA	Italy	Banco Popolare Società
20	4-Feb-08	27-Jun-08	Italy	Intesa SanPaolo SpA	Ukraine	Komertsiynyy Bank Praveks-Bank PAT
21	31-Jul-08	31-Jul-10	Italy	Banca Popolare dell'Etruria e del Lazio Scarl	Italy	Banca Popolare delle Province Molisane
22	19-Nov-08	8-Jan-09	Japan	Nomura Holdings Inc.	France	Lehman Brothers Holdings Inc
23	26-Mar-08	30-Sep-08	Malaysia	Malayan Banking Bhd	Singapore	Sorak Financial Group Holdings Pte Ltd
24	31-Aug-09	25-Nov-09	Sweden	Nordea Bank AB	Denmark	Fionia Bank A/S
25	15-Sep-08	28-Oct-08	Sweden	Svenska Handelsbanken AB	Denmark	Lokalbanken i Nordsjælland A/S
26	15-May-09	1-Jul-09	Sweden	Nordnet AB	Finland	eQ Pankki Oy
27	15-Oct-09	29-Jan-10	Singapore	Oversea-Chinese Banking Corporation Ltd	Singapore	ING Asia Private Bank Ltd
28	26-Mar-10	14-May-10	USA	Ameris Bank	USA	Satilla Community Bank
29	16-Jan-09	14-Aug-09	USA	BB&T Corporation	USA	Colonial Bank
30	3-Nov-09	1-Jul-10	USA	Bryn Mawr Bank Corporation	USA	First Keystone Financial Inc.
31	25-Jun-08	7-Nov-08	USA	Community Bank System Inc.	USA	Citizens Financial Group Inc.
32	27-Jul-09	9-Apr-10	USA	First Niagara Financial	USA	Harleysville National

				Group Inc.		Corporation
33	19-Oct-09	18-Dec-09	USA	Hancock Holding Company	USA	Peoples First Community Bank
34	29-Dec-09	28-May-10	USA	Horizon Bancorp Inc.	USA	Am Tru Inc.
35	15-Jul-10	30-Nov-10	USA	People's United Financial Inc.	USA	Bank of Smithtown
36	24-Oct-08	31-Dec-08	USA	PNC Financial Services Group Inc.	USA	National City Corporation
37	18-Mar-10	16-Jul-10	USA	Roma Financial Corporation	USA	Sterling Banks Inc.
38	22-Dec-09	17-May-10	USA	State Street Corporation	Italy	Intesa Sanpaolo SpA
39	24-Jun-10	6-Dec-10	USA	WSFS Financial Corporation	USA	Christiana Bank & Trust Company
40	10-Sep-08	17-Apr-09	USA	Yadkin Financial Corporation	USA	American Community Bancshares Inc.
41	4-Dec-08	27-Feb-09	USA	Capital One Financial Corporation	USA	Chevy Chase Bank
42	6-Mar-09	24-Jul-09	USA	CommerceWest Bank	USA	Discovery Bancorp
43	20-Sep-10	17-Nov-10	USA	Jacksonville Bancorp Inc.	USA	Atlantic BancGroup Inc.
44	25-May-10	30-Nov-10	USA	Kearny Financial Corporation	USA	Central Jersey Bancorp
45	25-Aug-09	4-Dec-09	USA	Salisbury Bank and Trust Company	USA	Webster Bank NA
46	19-Mar-08	1-Jul-08	USA	Valley National Bancorp	USA	Greater Community Bancorp
47	19-Mar-08	6-Nov-08	South Africa	Absa Bank Ltd	South Africa	Meeg Bank Ltd

Bibliography

Akben-Selcuk, E., & Altiok-Yilmaz, A. (2011). The impact of mergers and acquisitions on bidder performance: evidence from turkey. *Business and Economics Journal*, 11(22), 1-8.

Akhigbe, A., Madura, J., & Whyte, A. M. (2004). Partial anticipation and the gains to bank merger targets. *Journal of Financial Services Research*, 26, 55–71.

Al-Khasawneh, J. A., & Essaddam, N. (2012). Market reaction to the merger announcements of us banks: a non-parametric x-efficiency framework. *Global Finance Journal*, 23(3), 167-183.

Altunbas, Y., & Marques, D. (2008). Mergers snd acquisitions snd bank performance in europe: the role of strategic similarities. *Journal of Economics and Business*, 60, 204-222.

Asimakopoulos, I., & Athanasoglou, P. P. (2013). Revisiting the merger and acquisition performance of European banks. *International Review of Financial Analysis*, 29, 237-249.

Beccalli, E., & Frantz, P. (2013). The determinants of mergers and acquisitions in banking. *Journal of Financial Services Research*, 43, 265-291.

Behr, A., & Heid, F. (2011). The success of bank mergers revisited. An assessment based on a matching strategy. *Journal of Empirical Finance*, 18(1), 117-135.

Beltratti, A., & Paladino, G. (2011). Is M&A different during a crisis? Evidence from the European banking sector. *Journal of Banking & Finance*, 37(12), 5394-5405.

Bernad, C., Fuentelsaz, L., & Gomez, J., (2013). The consequences of mergers on the profitability of Spanish savings banks. *The Service Industries Journal*, 33(2), 266-278.

Bertrand, O., & Betschinger, M. A. (2012). Performance of domestic and cross-border acquisitions: empirical evidence from Russian bidders. *Journal of Comparative Economonics*, 40, 413-437.

Caiazza, S., Pozzolo, A. F., & Trovato, G. (2014). Do domestic and cross-border M&A differ? Cross-country evidence from the banking sector. *Applied Financial Exonomincs*, 24(14), 967-981.

Campa, J. M., & Hernando, I. (2006). M&As performance in the European financial industry. *Journal of Banking & Finance*, 30, 3367–3392.

Chatterjee, S. (1986). Types of synergy and economic value: the impact of acquisition on merging rival firms. *Strategic Management Journal*, 7(2), 119-139.

Chronopoulos, D., & Girardone, C., Nankervis, J. C. (2013). How do stock markets in the US and Europe price efficiency gains from bank M&As? *Journal of Financial Services Research*, 43(3), 243-263.

Cornett, M. M., McNutt, J. J., & Tehranian, H. (2006). Performance changes around bank mergers: revenue enhancement versus cost reduction. *Journal of Money, Credit, and Banking*, 38(4), 1013-1050.

Correa, R. (2009). Cross-border bank acquisitions: is there a performance effect? *Journal of Financial Services Research*, 36, 169-197.

De Guevara, J. F., Maudos, J., & Perez, F. (2005). Market power in European banking sectors. *Journal of Financial Services Research*, 27(2), 109-137.

Egger, P., & Hahn, F. R. (2010). Endogenous bank mergers and their impact on banking performance: some evidence from Austria. *International Journal of Industrial Organization*, 28, 155-166.

Ekkayokkaya, M., Holmes, P., & Paudyal, K. (2009). The euro and the changing face of European banking: evidence from mergers and acquisitions. *European Financial Management*, 15, 451-476.

Fields, L. P., Fraser, D. R., & Kolari, J. W. (2007). Bidder returns in bancassurance mergers: is there evidence of synergy? *Journal of Banking and Finance*, 31(12), 3646-3662.

Filson, D., & Olfati, S. (2014). the impacts of Gramm-Leach-Bliley bank diversification on value and risk. *Journal of Banking and Finance*, 41, 209-221.

Fridolfsson, S. O., & Stennek, J. (2005). Why mergers reduce profits and raise share prices? A theory of preemptive mergers. *Journal of the European Economic Association*, 3, 1083–1104.

Goddard, J., McKillop, D., & Wilson, J. O. S. (2009). Which credit unions are acquired? *Journal of Financial Services Research*, 36, 231–252.

Goddard, J., Molyneux, P., & Zhou, T. (2012). Bank mergers and acquisitions in emerging markets: evidence from Asia and Latin America. *The European Journal of Finance*, 18(5), 419-438.

Hagendorff, J., Collins, M., & Keasey, K. (2008). Investor protection and the value effects of bank merger announcements in Europe and the US. *Journal of Banking and Finance*, 32, 1333-1348.

Hagendorff, J., & Nieto, M. J. (2013). The safety and soundness effects of bank m&a in the eu: does prudential regulation have any impact? *European Financial Management*, 9999, 1-29.

Halkos, G. E., & Tzeremes, N. G. (2013). Estimating the degree of operating efficiency gains from a potential bank merger and acquisition: a DEA bootstrapped approach. *Journal of Banking and Finance*, 37, 1658-1668.

Hankir, Y., Rauch, C., & Umber, M. P. (2011). Bank M&A: a market power story? *Journal of Banking and Finance*, 9, 2341-2354.

Hernando, I., Nieto, M. J., & Wall, L. D. (2009). Determinants of domestic and cross-border bank acquisitions in the European Union. *Journal of Banking and Finance*, 33, 1022–1032.

Hillier, D., Ross, S. A., Westerfield, R. W., Jaffe, J., & Jordan, B. D. (2010). *Corporate Finance European Edition*. New York: McGraw-Hill Education.

Ismail, A., Davidson, I., & Frank, R. (2009). Operating performance of European bank mergers. *The Service Industries Journal*, 29(3), 345-366.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeover. *American Economic Review*, 76(2), 323-329.

Kalra, N., Gupta, S., & Bagga, R. (2013). A wave of mergers and acquisitions: are Indian banks going up a blind alley? *Global Business Review*, 14(2), 263-282.

Knapp, M., Gart A. & Chaudhry, M. (2006). The impact of mean reversion of bank profitability on post-merger performance in the banking industry. *Journal of Banking and Finance*, 30, 3503-3517.

Lensink, B.W., & Maslennikova, I. (2008). Value performance of European bank acquisitions. *Applied Financial Economics*, 18(3), 185-198.

Marimuthu, M., & Ibrahim, H. (2013). A case study of the local bank merger: is the acquiring entity better off? *Accounting and Finance Research*, 2(2), 22-28.

Moeller, S.B., Schlingemann, F.P., & Stulz, R.M. How do diversity of opinion and information asymmetry affect acquirer returns? *The Review of Financial Studies*, 20(5), 2047-2078.

Montgomery, C.A. (1985). Product-market diversification and market power. *Academy of Management Journal*, 28(4), 789-798.

Pasiouras, F., Tanna, S., & Gaganis, C. (2011). What drives acquisitions in the EU banking industry? The role of bank regulation and supervision framework, bank specific and market specific factors. *Financial Markets, Institutions and Instruments*, 20, 29–77.

Palepu, K. G., Healy, P. M., & Peek, E. (2013). *Business analysis and valuation: IFRS edition*. Hampshire: Cengange Learning EMEA.

Rani, N., Yadav, S. S., & Jain, K. P. (2014). Impact of domestic and cross-border acquisitions on bidder shareholders' wealth: empirical evidence from Indian corporate. *International Journal of Business and Management*, 9(3), 88-110.

Rezitis, A. N. (2008). Efficiency and productivity effects of bank mergers: evidence from the Greek banking industry. *Economic Modelling*, 25, 236–254.

Roller, L., Stennek, J., & Verboven, F. (2001). Efficiency gains from mergers. *European Economy*, 5, 31-128.