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Cross-border bank mergers and acquisitions in Western Europe

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Abstract

This study examines the short-term and long-term effects of cross border mergers and acquisitions in the Western European banking industry between January 1999 and December 2010. Using the event study methodology, I explore the stock price reaction of both bidders and targets and then I analyze the determinants of this reaction in a short-time period. I also employ various fundamentals for the acquiring firms in order to assess the operating performance surrounding the year of the deal. My findings provide evidence of significant positive market reaction for targets, while acquirers earn negative or around zero and non-significant abnormal returns. In addition, the regression analysis shows that the announcement value, the announcement premium, the nature of bid, the total assets of the target, the return of assets ratio and the cost-efficiency measure are the main driving forces behind the target's significant abnormal returns. Finally, I test the long-term performance of the acquiring banks by using accounting, efficiency and performance figures. The results reveal significant changes in total assets, total shareholders' equity, net income and non-interest expenses subsequent to the transaction.

Keywords: Cross border, mergers, acquisitions, banks, Western Europe

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1. Introduction

Mergers and acquisitions (M&As) are terms that characterize a corporate strategy. The main objective of M&As is that two separate organizations come to a deal in order to achieve greater results as a unity than acting discretely. The strategy intends to enforce the position of a company, spread or diversify its activities, create economies of scale, increase efficiency and competition or decrease costs (Paul A. Pautler, 2001). The participants of this strategy are the acquiring company that makes the offer, the target that accepts the bid and there may be a seller that promotes the deal.

Although I usually refer to a merger or an acquisition as identical terms, there is a slight distinction between them; the acquisition occurs when an institution takes over another organization and assimilates it, while a merger occurs when two associations mutually agree to become one by an exchange of securities. Therefore, I use both terms interchangeably. An acquisition can be categorized as friendly or hostile according to the type of the bidder's announcement to the target's board of directors and to the shareholders; it depends on the terms that the deal is realized.

The usual objectives of consolidation process are capital restructure, reduction of operating costs and expansion of the market share (Frohlick and Kavan, 2000). Additionally, an organization may intend to exploit better technologies or create value for its shareholders. In comparison with domestic M&As, cross border mergers seem to be more strategic for growth and operational performance (Altunbas and Ibane, 2008). In the contrary, cost structure and capital diversity are issues that remain unspecified yet. It is generally believed that when the consolidated institution is more valuable than the two firms together - as separate units are, M&As provide benefits to shareholders. The excess value is derived by the performance improvement which involves efficiency growth, accrued market power, raising capital efficiency, expansion of diversification and cost efficiency. However, cross-border M&As may include some risks which usually involve operating risks because of cultural differences between the countries, accounting, reporting and regulation issues, and possible foreign exchange risk (Asimakopoulos and Athanasoglou, 2009).

Mergers and acquisitions in different countries may seem difficult to succeed because of the different jurisdictions that each country applies, but within the

European Union the barriers seem to have been erased. In October 2005, a directive was voted by the European Parliament and provided procedural rules in order to facilitate even the limited liability cross-border mergers within the Union. However, many Directives remain under the power of national law of the host countries where the merger occurs. The positive perspective is that as European Union supervises and imposes similar trade rules. In fact, it is believed that cross-border merged organizations outperform the domestic institutions (OECD, 2007). As a consequence of the measures, an important and continuous wave of bank mergers and acquisitions has realized over the last decades. By the introduction of euro, the need for creating a single market for financial services and the introduction of Monetary Union, during the period 1985-2000 numerous mergers took place in Europe, but especially domestic mergers; even with the introduction of a unified currency among European countries, cross border transactions have only attained 11% of all M&As within the European Union, while 42% was the percentage of cross-border mergers which involved banks outside the Union (Campa and Hernando, 2006). More specifically during the 1990s, a limited upcoming number of cross-border bank M&As occurred in Western European countries; although banks in EU started to be more interested in expanding outside the national borders, they were especially interested in eastern European countries – especially from 1998-1999 (Asimakopulos and Athanasoglou, 2009). During 1990s about 80% of bank M&A transactions noticed in four member states: Germany, Italy, France and Austria and implicated small and very small banks, in order to survive and achieve a sufficient size. In the other hand, the deals between larger banks occurred by the need for strategic repositioning and consolidation.

After 2002, a trend of growth in cross border mergers was observed. A study of Nnadi and Tanna (2009), which focus on domestic and cross border EU mergers, reveals that cross border M&As provide higher abnormal returns than the domestic and also that mega cross border transactions are more in number than the mega domestic deals. Finally, they estimated that cross border mergers represent 69% of all mega M&As in the European Union.

This study is going to shed some light on cross-border bank mergers and acquisitions which took place from 1999 until 2010 in the Western Europe. In specific, I examine the short term share price reaction of bidders and targets surrounding M&As announcements. In addition, I assess the long-term operating performance of bidders around the M&A deal by testing the changes in means and

medians of certain fundamental variables. Finally, I perform a multi-variable regression analysis in order to detect the factors that explain the wealth effects provoked by the M&As announcements.

I was motivated to examine the Western European market (United Kingdom, France, Spain, Italy, Sweden, Norway, Luxemburg, Switzerland, Ireland, Iceland, Finland, Portugal, Austria, Netherlands, Cyprus, Denmark, Greece, Germany, Monaco, Liechtenstein, Malta) and the transactions occurred within this region for two reasons. First, my aim is to focus on specific markets where M&As flourished in recent years; In fact I explore the completed mergers and identify whether or not they have achieved their expected beneficial outcomes. In addition, there is much interest in observing this market nowadays, where it is influenced by the global economic crisis; Mergers and acquisitions in the financial sector are suggested to be mandatory measures of survival.

Furthermore, I believe that my study contributes to the pertinent literature, because there is not much research for cross border mergers as there is for U.S. deals. In addition, the existing literature mostly concerns cross-border transactions that have occurred between European and U.S. participants and not between countries within the Western Europe. Besides, this study focuses only on banking deals within the Western Europe, in contrast to other studies which include deals from the overall spectrum of the financial sector and studies that cover shorter period of time.

1.1 Overview of Western Europe cross border bank mergers

The European banking system has historically undergone a large number of changes and restructures. Although the European Committee has encouraged banks to merge in order to achieve economies of scale and greater efficiency, cross border bank mergers was not such a frequent measure until 2002. During the observing period of the study, the years of high M&A activity are around 2003 and 2008. Almost all Western European Union banks participated in cross border transactions – either as bidders or as targets - even smaller banks from small markets. But some of them seem to be the leaders in these transactions; in the role of acquirer financial institutions from Finland, Luxembourg and Greece are the frontrunners, while the countries where the targets are situated are initially Italy and then United Kingdom,

Belgium and Spain. In Appendix (1) there is a complete table of the testing mergers and acquisitions during 199-2010.

2. Literature Review

The subject of bank consolidation possesses a wide range of literature reviews concerning the causes and the effects of mergers and acquisitions (e.g. Berger et al., 1999 &, DeYoung, Evanoff and Molyneux, 2009). Many studies focus on the effects of mergers by using three basic aspects: the achieved cost efficiency of mergers, the upturn or downturn of net income to profits and finally the behavior of the stock market to the announced transaction. Most of available knowledge on the performance effects of bank M&As derives from the examination of the U.S. market (e.g. Piloff and Santomero, 1998). In earlier studies, it has been attributed less attention to the European bank mergers, basically because of the difficulties in analyzing the fragmented European bank markets.

Earlier studies (from 1980s until 1990s) found that targets obtain positive abnormal returns, while acquirers receive small negative returns and statistically insignificant or economically small. To start with, there is extensive literature regarding the nature of bid variable, whether the deal is hostile or friendly. Acquithe and Kim (1982) claimed that hostile transactions implicate greater bids from acquirers than in friendly deals. In hostile transactions, targets are normally traded at a higher discount on acquisition announcement day than in a friendly deal. Consequently, shareholders who seek for maximum value can expect greater abnormal returns for target firms in hostile than friendly acquisitions. Moreover, Jensen and Ruback (1983) argued that, in a hostile deal the price offered by the acquirer is considerably higher than the real market price of the target. Travlos (1987) advanced this idea by suggesting that hostile takeovers are mostly cash transactions and that is the reason that they offer greater prices and returns.

Two years later, this idea was further developed. It is well documented in the literature that stock returns increased significantly to target firms in cash payment transactions than in stock or mixed payment acquisition terms. Fishman (1989) supported that cash –as method of financing a deal- deters the competition. He claimed that the payment term is decided according to the expected profitability of the

acquisition; bidders may have information about the transaction's profitability and so about the value of the stock offer. His results showed that low-valuing bidders offer securities, while high valuation of the target lead to cash offers.

Furthermore, various studies observed the cost efficiency by implementing ratios and accounting data. Berger and Humphrey (1992) performed multiple regressions and found that the cost and profit efficiency are not strictly related to the mergers. They also examined other accounting ratios – asset and total costs to asset ratios and found that there are no average profits on the consolidated unity. Houston and Ryngaert (1994) conducted to similar results. They studied complete and incomplete bank mergers. They used cumulative abnormal returns at the time of the merger from T days before the announcement till the announcement date (day 0) as well as the total sum of acquirer and target abnormal returns and they found that merger announcements did not on average conduct to overall gains in stockholder wealth. In addition, they observed that mergers that involve strong past performance create higher value. Besides, Madura and Waint (1994) studied the acquirers' abnormal returns over the post-merger period. They used the event study methodology and found that average cumulative abnormal returns were negative one month after the deal announcement.

On the other hand, Zhang (1995) who studied a sample of 107 mergers from 1980 until 1990 provided that mergers generally convey an overall value. He added that a crucial factor of accrued value was the achieved diversification. In addition, as much diversification exists, returns are more stabilized and the low volatility can increase shareholders' wealth. Besides, lower volatility can lead to decreased expected value of bankruptcy costs (Santonero, 1995).

Moreover, Pillof (1996) proclaimed that the shareholders' gain is a sign of economic efficiency. He claimed that mergers can conduct to higher returns when they accomplish cost reductions. He used the pre-merger cost measures, such as expenses and non interest cost of the target banks, as a tool. Cost efficiency can be achieved via cost reduction by eliminating the unnecessary labor, closing redundant bank branches and by centralizing back office functions (Pillof, 1996). Besides, cost efficiency is related to the movement of more skilled workers or to the acquirement of superior management policies which apply better pricing strategies, dispose more efficient product mixes or adopt ameliorated sales and marketing programs. Pillof also

estimated that mergers can result in up to 30% cost reduction of the targets' non-interest expenses.

Altunbas, Molyneux and Thornton (1997) used a different empirical approach; they implemented a theoretical method in order to observe and understand major European bank mergers by merging their balance sheets. They concluded that the consolidated cost base is more possible to accrue than decrease.

Later on, studies used more accounting ratios as tools for their observations, Pilloff and Santomero (1997) analyzed that bank's productivity based on the bidder's return on assets (ROA) and return on equity (ROE) have no impact in value gain. Moore (1997) examined small banks and found that the acquiring banks value the smaller acquired banks higher than the smaller banks' management does. Rad and Van Beek (1999) did not find a relation between the bidder's size and the target gains.

In general, the studies in cross-border bank M&As have mostly been examined thorough at macro-level. Berger et al (2000) and Peek et al (1999) proceeded to the argument and claimed that failures of cross border bank mergers have been realized due to the conditions and prerequisites of the host country. Then, Berger et al (2000) claimed that cross border M&As usually take place as a result of deregulation initiatives, but there was no empirical research about this point. In addition, they pointed out that economies of scale are frequently the motivations for international mergers. Besides, variables such as geographical distance, language and cultural similarities or differences between the countries of the two parties, the regulatory and supervisory standards set as the most important determinants for corporate strategy measures to enter in a foreign country. Their study attributed slow growth in cross border M&As as a result of these efficiency barriers.

On the other hand, a study of Claessens (2001) suggested that when the mergers involve acquired banks in developing economies, it is easier for the bidder to enter and spot in the existing local banks. Focarelli and Pozzolo (2001) and Buch and DeLong (2004) also supported that the host country is a crucial factor in cross-border takeovers. Countries with stable economic environment are more attractive to be approached by foreign investors than those with instability.

During the same year, Huizinga, Nelissen and Vennet (2001) examined European bank mergers from 1994 to 1998 and found that the cost efficiency of the consolidated banks is positively related to the merger and that the profit efficiency is slightly affected. Besides, Bank for International Settlements (2001) reported that

most event studies find that total shareholders' value (the combined value of the bidder's and the target's stock) is not influenced by the announcement of an acquisition. However, the stock price of the acquiring bank seems to decrease around the announcement date, but this is balanced by the upturn of target's stock prices. Consequently, it is admitted that M&As involve a wealth transfer from shareholders of the bidder to the target banks. Literature generally provides that bank acquisitions do not create value for the bidder, except when it concerns acquisitions of emerging market firms.

In 2002, Vander Venet supported the argument that acquirers in cross-border mergers and acquisitions have higher profit- and cost- efficiency than the targets. The author claimed that bidders aim to create value by enforcing their superior management and techniques on less efficient targets. Nevertheless, they noticed that it is target efficiency that influences the bidder's abnormal returns than relative efficiency.

Buch and DeLong (2003) studied a sample of 3000 cross border mergers that occurred between 1985 and 2001 worldwide, in order to analyze the determinants of international bank mergers. Their study contained information about the size of the financial system, more precisely the credit over GDP and the size of the largest bank in each partner's country. They used variables such as the level of GDP and the population density of the target's country, as determinants of the acquirers who seek economies of scale. They showed that acquirers who seek to enter in a market and capture an important market share are more attracted by markets where an established domestic bank possesses a complete branch network. They also noticed that cross border bank mergers within the European Union did not increase significantly in 1992 after the EU's single market program, but the number of cross border bank M&As among Canada, Mexico and U.S. augmented after the enforcement of the North American free trade agreement in 1994. The study applied an analysis of residuals which showed that residuals have a tendency to be smaller for mergers between participants established in developing countries. They computed that this model attain 2.43 for mergers between banks in developed countries, whereas it is calculated that participants in developing countries reach a maximum of 12.87.

Beitel, Schiereck and Wahrengurg (2004) found that in European takeovers the cost-to-assets ratio is significant for targets and not for bidder returns. Beitel et al (2004) studied a sample of European bank mergers from 1985 until 2000 and noticed

that M&As overall returns are greater for non-diversifying transactions and when targets demonstrate a past poor performance. Kropf and Viswanathan also in 2004 showed that organizations have motivations to make an offer when their stocks are overvalued; it is considered to be «hot» equity markets which then it corresponds to «hot» merger markets. They also found that if investors are rational, a merger announcement – even in a «hot» market- may lead to bidders' losses. Altunbas and Ibane (2004) observed European bank mergers and declared that they increase the bank's return on capital. They also found differences between domestic and cross-border bank mergers.

A step further, Campa and Hernado (2006), who studied financial takeovers in Europe, explored the idea that smaller targets have greater announcement returns. They examined the M&As performance of European banks from 1998 to 2002 and found that most acquirers bid banks with a continuity of low operational profits. They also found that after the merger, the small targets register improved financial performance and notify greater returns on shareholders' equity. However, they claimed that when the merger concerns cross-border entities, the acquirers often meet difficulties in adopting a small bank, while poor performance is noticed after the merger in such cases. In addition, Soussa and Wheeler (2006) investigated cross border bank acquisitions in emerging markets and found that most bank acquisitions are not beneficial for the acquiring bank.

Knapp et al. (2006) and Koetter et al. (2007) promoted that acquisitions usually serve to transfer assets from poorly managed to better managed companies; in fact, they used the hypothesis of poor managerial performance based on ROA. In addition, it is provided that banks which operate in more concentrated markets are less likely to be acquired by other banks in the same country but more probable to be acquired by foreign banks within the European Union.

More recent literature (Officer, 2003; Moeller, 2005; Cai and Vihj, 2007) validated the argument that cash transactions imply higher target valuation and claim that cash payments are also related with higher acquisition premiums. In fact, high premiums are associated with high returns and they are used as a measure of target's high valuation and as a measure to discourage competition. Subsequently, target shareholders receive greater returns in cash transactions. However, Jennings and Mazzeo (1993), Officer (2003), Bange and Mazzeo (2004) opposed to Fishman's claim about the competition and provided that approximately 15% of cash deals

induce competing offers, while only 7% of stock offers do so. They showed that there is no significant impact of cash to competing bids.

Current studies in majority emphasize on more specific characteristics, on micro-variables that refer to the target. These are target's size, performance and efficiency (Bonin et al, 2005; Lanine and Vander Vennet, 2007). Lanine and Vander Vennet, (2007) pointed out that most bidders in European bank mergers cannot increase target's cost efficiency, but they merely improve target's profit efficiency.

More recently, studies (Hagendorff, Collins and Keasey, 2008) suggested that only the European bank M&As have increased the shareholders' value. Hannan and Pillof (2008) studied US banks and found that less profitable banks are more reached for acquisition, regardless of the bidder. Berger, Demsetz and Strahan examined U.S. and European market and claimed that more efficient acquirers tend to buy less efficient targets. They also found that inefficiency is positively related to the prospect of acquisition. Besides, Claessens and Van Horen (2008) revealed that banks target in countries, where they possess competitive advantage over competitors. Additionally, Vergos and Christopoulos (2008) examined the Greek banking sector and they noted that bank M&As achieve positive returns in short term period – until twenty days after the announcement, but negative abnormal returns in the long-run – until ninety days - after the announcement. A major motivation for cross-border M&As is the increased market power. It is provided that cross border mergers deter the competition; greater market power can lead to higher profits of the consolidated firms either by raising loan rates or by lowering deposit rates. Considering the bank diversification, it is assumed that consolidation may conduct to geographic enlargement or to the enlargement of products and services offered, and therefore more customers may be attracted. Besides, Surveys of Altunbas and Ibane (2008) and DeYoung, Evanoff and Molyneux (2009) find that increased product line focus on a merger produced higher abnormal returns. Through a merger, profitable activities like lending can be increased easier and cheaper, without additional required capital.

Finally, Becalli and Frantz (2009) underlined that bank M&As may incur deterioration in return on equity ratio (ROE), cash-flow return and in profits. Two recent studies of European M&As provided evidence for the acquisition premiums. In specific, Hagendorff, et al. (2010) revealed that premiums paid are lower in countries with stricter regulatory and stronger deposit insurance rules. Molyneux, Schaeck and

Zhou (2010) provided that acquisition premiums are positively correlated with the probability and trial of the acquirers to become «too-big-to-fail».

In sum, the literature reviews reveal that M&As transactions are related with positive abnormal returns for the targets on the announcement date and their magnitude depends mostly on market data.

3. Data Analysis

As mentioned in the literature section, most of the previous studies analyzed bank mergers either in short-run or in long-run. This study uses market data and accounting data over the period 1999-2010. The purpose of the study is to look through the short-term effects of the deal announcement and then the long-term effects surrounding the announcement year. To gauge the short-term reaction I employ the traditional event study methodology by calculating both abnormal and cumulative abnormal returns 20 days surrounding the M&A date (day 0). Then, I observe the results and try to interpret the determinants of the significant results (ROA, ROE, and bank's size, announcement premium, and announced total value, method of financing and nature of bid). Furthermore,, I assess the long-term operating performance of bidders several year around the year of the deal using ratios such as the earnings per share, total shareholders' value, net income, non-interest expenses, return on assets and return on equity.

3.1 Sample Selection and data collection

The sample selection procedure is achieved by collecting data from Bloomberg and Thomson Databases. In order to form the sample, specific search criteria have been set as they are presented below:

- i) The announcement date of the merger or acquisition has to be realized between 01/01/1999 and 31/12/2010.
- ii) Both acquirer and target should be banks having the same SIC code.
- iii) The status of the merger or the acquisition has to be completed and not pending.

- iv) The observations should refer only to cross-border events between two banks which are placed in different countries.
- v) The acquiring and the acquired bank should be located in Western Europe.
- vi) The bidder should be a public traded institution, while the target may be either public or private. This determinant created problems during the procedure of accumulating market or fundamental data.

Initially, Bloomberg provided 186 M&As deals, while Thomson database reproduced 492 results for the observing period. However, a number of transactions were removed due to lack of information. More specifically, I ruled out all the transactions that acquirers and targets were established in the same country and by default of the database –mostly of Thomson database - they were presented in the sample. I also excluded certain cross-border transactions, which involved either multiple bidder engages or various acquiring banks, because there was no much information about the dominant participant. Finally, as I cross-checked the pairs of transactions in both databases, I erased all the observations that did not refer to completed M&As; specifically, the initial output of Bloomberg contained either transactions which were not completed, or which were not accurate mergers or acquisitions, but another form of purchase. Consequently, the final sample consists of 76 transactions of mergers and acquisitions.

To calculate abnormal returns around M&As daily closing prices 240 days before and 240 days after the announcement date of the merger are collected for the equities and for their market indices. Moreover, several fundamentals were extracted for estimating the long-term performance of bidders. These are ROE, ROA, earnings per share of the bidder, total assets, net income, non-interest expense, and total shareholders' value for one year before and two years after the announcement.

3.2 Descriptive statistics

Table 1 presents the sample distribution of the 76 M&A deals during the period 1999-2010. As it can be observed the transactions do not appear to be concentrated around certain years, but they are scattered over the years. As I mentioned, the rising trend of cross-border M&As in the European Union started after

1999, and similarly did my sample of Western European Union banks. The increasing mobilization of cross-border deals presented from 2000 until 2005, and during the prosperous year for the market 2008. However, the global economic recession, influenced and limited the transactions in 2009 – 2010.

Table1: Sample distribution per year

Year	Number of M&As	%
1999	2	2.63
2000	6	7.89
2001	7	9.21
2002	6	7.89
2003	11	14.47
2004	10	13.16
2005	9	11.84
2006	6	7.89
2007	5	6.58
2008	8	10.53
2009	3	3.95
2010	3	3.95
Total	76	100.00

Table 2 contains information regarding the home country of bidders and targets. It seems that France and United Kingdom are the main markets where bidders look for cross – border bids. In fact, French banks, which play the role of the acquirers, possess about 20 % of the sample’s transactions. On the other hand, it is Italy and Luxemburg as host countries, which mostly accept foreign offers and complete the deals. The literature attributes high importance to the host countries of the targets; indeed sometimes the studies set them as important determinants which influence the results of abnormal returns.

Table 2: Sample distribution by target and bidder country

ACQUIROR COUNTRY	BB	CY	DC	FP	GR	IR	IM	LN	LX	NA	PL	SM	SS	SW	TOTAL
TARGET COUNTRY															
AV	2				1		2								5
BB				3				1							4
DC	1							1					4		6
FH			1												1
FP								4		1					5
GA		2		3				1			1				7
GR	1									2		1			4
ID	1		1												2
IM				4	2					1		1			8
LE														2	2
LN												3			3
LX	1			1	1	1	1							2	7
MN				1											1
MV		1													1
NA	1			1											2
NO						2						1	2		5
PL	1											2			3
SM				1				1	2		1				5
SW				1	1			1						2	5
TOTAL	8	3	2	15	5	3	3	9	2	4	2	8	7	5	76

Note: AV: Austria, BB: Belgium, CY: Cyprus, DC: Denmark, FH: Finland, FP: France, GA: Greece, GR: Germany, ID: Ireland, IR: Iceland, IM: Italy, LE: Liechtenstein, LN: UK, LX: Luxembourg, MN: Monaco, MV: Malta, NA: Netherlands, NO: Norway, PL: Portugal, RU: Russia, SM: Spain, SS: Sweden, SW: Switzerland

Finally, Table 3 provides some descriptive statistics for bidding firms such as size (measured by total assets), ROE, ROA, EPS, net income, non-interest expense and total shareholders' value. Actually, it presents only the mean, median, standard deviation, the min and the max price of the sample's figures. An initial estimation is that most of them possess high fluctuations and important standard deviation. As it concerns the total assets, they follow relative homogeneity. The majority of profit ratios show high prices, higher than the mean of the sample. The rest figures appear important fluctuations.

More specifically, total assets possesses a price of 1.47 as standard deviation of the logarithmic prices, which implies that my sample is homogenous referring to the size of the acquirers. It also denotes that neither very large nor very small banks tend to make offers or bids in foreign institutions. Furthermore, it is worth to notice the great gap between the min and the max price of ROE (min= - 35.85, max= 30.70). This difference does not refer to the overall sample; the majority of the ratios' prices fluctuate around the min, but there are a few extreme values.

Table 3: Descriptive statistics

Year (0)	ROE(0) acq	ROA(0) acq	Total Assets (acquirer) (0)	ln Total Assets bidder(0)	Net Income acq.(0)	Net Income ln(0)	Non-interest expense (0)	Non-Interest expense ln (0)	Basic EPS (0)	Total Shareholders' Equity	Total Shareholders' Eq. ln(0)
mean	14.15	0.66	787528.83	12.98	4056.71	7.69	12015.89	8.87	3.09	33359.28	9.96
median	15.74	0.56	686697.80	13.44	3161.00	8.06	13654.50	9.52	1.18	29991.00	10.31
st. dev.	8.66	0.46	622270.12	1.47	3488.38	1.39	7714.94	1.41	4.25	23921.61	1.20
max(0)	30.70	2.14	2739361.00	14.82	13557.00	9.51	25331.00	10.14	19.90	95172.00	11.46
min(0)	-35.85	-0.53	10234.10	9.23	68.36	4.22	133.79	4.90	-2.30	750.00	6.62

4. Methodology

The implications of bank M&As have been mainly examined by the implementation of the event study methodology and the comparison of pre-merger and post-merger performance. Event studies mostly examine how the deal announcements influence the share prices. The majority of researchers employ the market model in order to examine the changes in the market value of the acquiring and the acquired firm. However, most studies cannot find any significant value augmentations (Piloff. 1996; Kwan and Eisenbeis. 1999). Regarding the pre- and post-merger performance the analysis is not standard. Berger et al. (1999) distinguish the different analysis to static and dynamic. He defines as static analysis this which does not provide direct information on the effects of M&As. but it predicts the consequences of the transactions and it uses data related to the consolidation, like the bank's size. On the other hand, Bergler et al. (1999) defines as dynamic the analysis that compares the performance of banks before and after the deal or compare the performance between consolidated and non-consolidated organizations. Moreover, there are studies that use performance ratios based on accounting data in order to analyze the impact of mergers and acquisitions. Others observe and compare the cost and profit efficiency of banks with their relative market index and they do this process for consolidated and non-consolidated banks.

Furthermore, a basic distinction about the usual methodology is that some studies use stock market data, while others apply accounting figures. Proponents of the first method claim that market data explain more accurately the value of consolidating the two participants. In fact, they contend that accounting data are not really reliable. The great majority of papers analyze the abnormal returns of bidders and targets, but some account the shareholders' wealth.

In this study, I employ market data and then certain accounting data. As it concerns the event study methodology, there is an assumption that the securities returns are linearly correlated to the market portfolios' returns. More specifically, two model types are used. The market-adjusted model is based on the hypothesis that systematic risk (beta) is equal to one, while the intercept «a» equals to zero. The market model explains the bank's stock reaction in relation to the market portfolio of stocks. Finally, for examining the long-term operating performance, I test for equality

of means and medians across years using the two-tailed test for means and the Wilcoxon/Mann-Whitney test for medians.

4.1 The market-adjusted model

In order to detect and interpret the stock price reaction to M&As, I calculate abnormal returns employing the market-adjusted model – both for the acquirer and for the target. The estimation period includes 10 days before the announcement and 10 days after the announcement, while day 0 is the announcement date. Using closing prices, I compute the daily logarithmic returns for the equities and for the corresponding market (benchmark) index, using the formula $R = \ln(R_i / R_{i-1})$. For the market-adjusted model, the basic assumption is that the coefficients of the market model are standard: “a” equals to 0 and “b” equals to 1. Then, daily abnormal returns are derived by the formula (1):

$$AR_t = R_{it} - R_{mt} \quad (1)$$

where:

AR_t : is the abnormal return on day t, $t = -10, -9, \dots, +9, +10$

R_{it} : is the logarithmic return for the bidder's or target's security on day t

R_{mt} : is the logarithmic return for the respective index m on day t

I also measure the average daily abnormal returns by taking the difference between daily logarithmic returns for the equities and the daily logarithmic returns for the relative market indices and divide them by the number of equities of the sample:

$$AAR_t = \frac{\sum_{i=1}^n (R_{it} - R_{mt})}{n} \quad (2)$$

To check the statistical significance of AARs I compute the t-statistic measure, by using the following formula:

$$t_{stat}(AAR_t) = \frac{AAR_t}{st.dev.(AAR_t)/\sqrt{n}} \quad (3)$$

where:

AAR_t : is the average abnormal return on day t , $t = -10 \dots +10$

st.dev.: is the standard deviation of the AAR's on day t

n : is the number of sample securities

Apart from the calculation of AAR for bidders and targets, I also compute the cumulative abnormal returns (CARs) for the entire sample. CAR is a tool to measure the excess returns that the equities can have due to the event announcement and it is the sum of all the previous abnormal returns over the observed period. Following the literature, firstly I calculate the daily cumulative abnormal returns 10 days before and after the announcement and then the combinations of CAR (-10-1), CAR (+1 +10), CAR (-5 +5), CAR (-5 -1), CAR (+1 +5), CAR (-3 +3), CAR (-1 +1), CAR (-1 0). CARs are computed as following:

$$CAR_{t_1 t_2} = \sum_{i=t_1}^{t_2} AAR_t \quad (4)$$

where:

$CAR_{t_1 t_2}$ is the cumulative abnormal return over the time interval starting from day t_1 ending on day t_2 , and

AAR_t : is the average abnormal return on day t .

To test the statistical significance of CARs I use the t-statistic, by applying the formula:

$$t_{\text{stat}}(CAR_t) = \frac{CAR_t}{\sqrt{T} * \text{st.dev.}(AAR_t)} \quad (5)$$

where:

CAR_t : is the cumulative abnormal return on day t

st.dev. (AAR_t) : is the standard deviation of the average abnormal return on day t

T : is the number of days observed in CAR_t (it is equal to $t_2 - t_1 + 1$)

4.2 Market model

As a robustness test, I also compute abnormal returns for targets and bidders, using the market model. It generally reflects the equities' performance related to the relative market index's performance over a longer period of time. The estimation

period for calculating «a» and «b» commences 240 days before and ends 11 days after the announcement.

Contrary to the formula (1), market model is estimated as:

$$AR_t = R_{it} - (a + b * R_{mt}) \quad (6)$$

where:

AR_t : is the abnormal return on day t, $t = -240, -239 \dots -12, -11$.

R_{it} : is the logarithmic return for the bidder's or target's security on day t

a, b : are the parameters; the intercept and the slope of the transaction pairs respectively

R_{mt} : is the logarithmic return for the respective index m on day t

The abnormal returns are averaged as :

$$AAR_t = \frac{\sum_{i=1}^n (R_{it} - (a + b * R_{mt}))}{n} \quad (7)$$

Therefore, the statistical significant of abnormal returns for the time period 10 days before and after the announcement date are tested using the formula:

$$t_{stat}(AAR_t) = \frac{AAR_t}{st.dev.t_1} \quad (8)$$

where,

AAR_t : is the average abnormal return on day t, $t = -10 \dots +10$

$st.dev.t_1$: is the standard deviation of the AAR's computed on the first calculation period « t_1 » (standard deviation of AARs from the 240th day until the 11th day before the announcement).

Finally, I estimate $CAR_{t_1 t_2}$ (using the formula (4)) for the 21 days around the announcement, and then I test the significance of the results as mentioned by the formula (5) of cumulative abnormal returns.

In general, the market-adjusted model and the market model are both widely accepted in the finance literature.

4.3 Multivariate regression analysis

In order to detect the potential significant wealth effects emanating from the M&As deals I perform cross-sectional multivariate regression analysis.

The dependent variable is the ARs of day 0 for targets and the independent variables that I test include the announced premium for the deal, the total announcement value the targets' size, the targets' beta coefficients, the bidder size, the non-interest expenses, the targets' return on equity and return on assets and two dummy variables which are the method of financing and the nature of bid (ROE, ROA, etc.). All the control variables are extracted by Bloomberg database. Firstly, they are tested for high correlation, in order to confront it and avoid misleading regression results. So, I need to form various regressions models. The regression analysis uses OLS employing White's heteroscedasticity consistent standard errors.

$$AR_i = a + \beta_1 AV_i + \beta_2 APR_i + \beta_3 B_i + \beta_4 BS_i + \beta_5 MF_i + \beta_6 TS_i + \beta_7 ROE_i \quad (1)$$

$$AR_i = a + \beta_1 NIEp_i + \beta_2 ROA_i \quad (2)$$

$$AR_i = a + \beta_1 APR_i + \beta_2 NB_i + \beta_3 TS_i \quad (3)$$

$$AR_i = a + \beta_1 AV_i + \beta_2 MF_i + \beta_3 TS_i + \beta_4 B_i + \beta_5 BS_i + \beta_6 ROE_i \quad (4)$$

where:

AR_i is the targets' abnormal returns on the announcement day (day 0) for the sample and the dependent variable of the regression models.

AV_i is the announced total value of the deal and it represents the price paid. It really examines whether the value of the deal may affect the investors' response in case they consider that the acquirer over- or under- value given the value of the target.

APR_i is the announced premium for the deal. It provides the difference between the real cost for acquiring the target against the price paid by the bidder (estimated value before the acquisition).

B_i is the beta coefficient price of the targets, referring to their country market index.

BS_i is the bidders' size which is figured by the total assets at day 0.

NB_i is a dummy variable referring to the nature of bid; it can be either friendly or hostile. A friendly takeover is when the bidder makes a public offer of stock or cash and the target will publicly approve the deal terms, while in a hostile takeover the target does not agree with the acquisition and its terms. The literature provides that a hostile takeover lead to higher shareholders returns for the target than a friendly takeover. When the information provides a hostile bid I give the value 1, otherwise I put 0.

MF_i is a dummy variable that refers to the method of financing the deal. The literature provides that cash is often a term of hostile takeovers. If the merger or acquisition is settled in cash then I give the number 1, otherwise I put 0.

TS_i is the targets' size and provided by the targets' total assets. The size – both for target and bidder- is an important variable since the merger between two large banks may require more benefits in terms of scale economies and cost reduction, but may contain a more complex procedure if the deal is occurred between a large and a small bank.

ROE_i is a proxy used to measure the targets' performance. Bloomberg calculates it as the difference between the net income and the preferred dividends divided by the average common equity. I use ROE ratio as it is recorded at the announcement day, in order to examine whether the targets' performance influenced the abnormal returns that the targets registered the announcement day.

ROA_i is another proxy used for the performance measurement and Bloomberg determines it as the subtraction of net income by preferred dividends, divided by average total assets.

$NIExp_i$ is the non-interest expense value of the targets; it includes almost all operating expenses like salaries, taxes, insurance, equipment, and vehicles. The literature provides that this variable affects the targets' abnormal returns.

According to the literature, past studies examine additional variables as determinants of returns such as the regulation restrictions, geographical variable, share of deposits and loans and dividend figures. However, I did not considered such data either because mostly contain dummy variables with insufficient information or because they did not worth to be mentioned.

4.4 Long – term reaction

In order to assess the long–term effects of M&As, I use yearly accounting data one year before and two years after the announcement year. The data refer to the acquiring firm for two reasons: First, because it is the only remaining institution after the deal in the case of acquisition and second, because it is the dominant firm in the deal.

In order to focus on the post-merger effects of the examining banks, I select some basic accounting figures which have been used previously in the literature. For example, Staikouras and Steliaros (1999) examined specific profitability factors of 17 commercial Greek banks during 1991-1998. They used return on equity (ROE) and return on assets (ROA) ratios in association with endogenous and exogenous variables. They observed that the profitability of Greek banks is influenced by the inflation rate, the reserve funds ratio for borrowings to the total assets and the ratio of debts to the total assets.

In this study, I use financial ratios such as the return on assets (ROA) ratio, the earnings per share (EPS) ratio, and the return on equity (ROE) ratio. As it concerns ROA, it is selected among other performance measures, because it can “remove the effect of any special one-time charges to net income” (Daley et al, 1997). It also has the advantage of not bonding the operating performance changes with the tax effects. The aforementioned ratio is estimated by subtracting the yearly cash preferred dividends from the yearly net income and by dividing the outcome by the average total assets. The return on equity (ROE) ratio is a major indicator of bank performance. More profitable banks can withstand shocks in the economy, and in M&A deals they may be easier to transfer resources from the more profitable bank to the weaker bank.

Moreover, I use some other accounting measures, such as non-interest expense and net income. Particularly the non-interest expense and other similar cost measures are applied widely by previous studies. It is an important cause and success determinant of deal. Furthermore, an important element for long – term reaction can be the market power effect of the deal. The size of the targets is used in order to test whether and how much it augmented. Finally, I examine the shareholders’ value so as

to test if the transaction accomplished its main object, that is to add value for shareholders.

I test both the means and medians of accounting variables by comparing the -1 year with the +1 or +2 year of the announcement. The test of means is based on two-tailed test, while the test for equality of medians is checked by the Wilcoxon/Mann-Whitney test.

5. Empirical Results

5.1 Announcement period abnormal returns

Table 4 shows the average abnormal returns (AAR's) for both participants of M&As on and around the announcement dates based on the market-adjusted model. The table reports that the AAR for the event period of 10 days before to 10 days after the announcement. In general, the results are consistent with the existing literature. Merger and acquisitions provide positive abnormal returns for the target around the announcement period. At the announcement day 0 the AAR of the bidder is -0.258% and statistically non-significant ($t = -0.88$), while the target earn an abnormal return of 10.271% statistically significant at the 1% level ($t = 4.03$). In general, targets present some significant results; except from the positive outcome of day 0, they present significant results at certain days (-10, -8, -4, +3, +10), but all of them take negative sign. This implies that the merger did not bear important benefits for the acquired bank. In the 5th day before the announcement, targets earn an average 2.675% abnormal return, which is not statistically significant though ($t = 1.18$). On the contrary, the acquirers do not appear to gain significant wealth effects from the deal, but in any case they fluctuate around zero (no important change).

Table 4: Average Abnormal returns for targets and acquirers – Market-adjusted model

Days	ACQUIRERS		TARGETS	
	AR %(mean)	t-student	AR %(mean)	t-statistic
-10	-0.254	-0.81	-1.336	-3.67***
-9	0.170	0.47	-0.370	-1.45
-8	0.209	0.94	-0.006	-0.02
-7	0.460	1.26	-1.088	-2.88***
-6	-0.159	-0.40	0.071	0.18
-5	-0.032	-0.09	2.675	1.18
-4	-0.060	-0.28	-0.943	-2.12**
-3	-0.013	-0.05	-0.465	-1.13
-2	-0.083	-0.37	1.041	0.67
-1	0.206	0.89	-0.024	-0.06
0	-0.258	-0.88	10.271	4.03***
1	0.038	0.14	1.455	1.38
2	0.320	1.14	-0.372	-1.06
3	-0.372	-1.29	-2.437	-1.72*
4	-0.310	-1.01	-0.422	-0.91
5	-0.265	-0.87	-0.527	-0.94
6	0.108	0.36	0.128	0.44
7	0.386	1.33	0.357	1.11
8	-0.021	-0.08	0.080	0.27
9	-0.240	-0.69	-0.190	-0.55
10	-0.107	-0.31	-0.851	-2.82***

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Similarly to the market-adjusted model, the market model provides relative results. Table 5 shows the corresponding AARs. Acquirers record insignificant and around zero abnormal returns, while targets acquire significant results especially in days -5, -2, 0, +1, +3, in three significance levels as it is shown below. The difference with the market-adjusted model is that in day -5, -2 and +1 the ARs are positively statistical significant (3.257% and 2.237% respectively). Only at the day +3 the target's AR acquires a negative and statistical significant outcome (-1.983) at significance level 10%. Besides, at the announcement day, the targets' AARs achieve a price 11.092% statistically significant at 1% significance level (t= 10.04).

Table 5: Average Abnormal returns for targets and acquirers – Market model

Days	ACQUIRERS		TARGETS	
	AR %(mean)	t-statistic	AR %(mean)	t-statistic
-10	-0.560	-1.30	-0.686	-0.62
-9	0.018	0.04	0.089	0.08
-8	0.074	0.17	0.467	0.42
-7	0.245	0.57	-0.667	-0.60
-6	0.101	0.24	-0.496	-0.45
-5	-0.236	-0.55	3.257	2.95***
-4	-0.204	-0.47	-0.624	-0.56
-3	0.141	0.33	0.024	0.02
-2	0.210	0.49	2.237	2.02**
-1	0.298	0.69	0.114	0.10
0	-0.159	-0.37	11.092	10.04***
1	0.471	1.10	2.062	1.87*
2	0.407	0.95	0.031	0.03
3	-0.317	-0.74	-1.983	-1.80*
4	-0.426	-0.99	0.325	0.29
5	-0.411	-0.96	0.263	0.24
6	0.056	0.13	0.983	0.89
7	0.273	0.64	0.630	0.57
8	-0.052	-0.12	0.664	0.60
9	-0.165	-0.38	0.445	0.40
10	0.015	0.03	0.061	0.05

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Moreover, the Cumulative Abnormal Returns (CARs) follow the same trend. Table 6 reports results from CARs around several periods such as (-10 +10), (-10 -1), (+1 +10), (-5 +5), (-5 -1), (+1 +5), (-3 +3), (-1 +1), (-1 0), which are calculated based on the market-adjusted model. The CAR of the bidder does not show again any abnormal behavior around the event day. The target's CAR in the two-day interval (days -1 and 0) is 11.702% and statistically significant at the 1% level (t= 2.70). Moreover, the target's CAR in the interval (-10 +10) presents a high return of 7.049% but not statistically significant (t= 0, 61). Similarly, at the interval (-5 +5) the target's CAR is equal to 10.253%, but with a low t-statistic value of 1.24 and at the interval (-3 +3) the CAR takes the value of 9.470% with a low t-statistic 1.43.

Table 6: Cumulative Abnormal Returns for targets and acquirers –Market-adjusted model

Day Interval	ACQUIRERS		TARGETS	
	CAR %	t-student	CAR %	t-student
CAR (-10+10)	-0.276	-0.25	7.049	0.61
CAR (-10 -1)	0.444	0.59	-0.445	-0.06
CAR (+1 +10)	-0.461	-0.61	-2.778	-0.35
CAR (-5 +5)	-0.828	-1.05	10.253	1.24
CAR (-5 -1)	0.018	0.03	2.284	0.41
CAR (+1 +5)	-0.588	-1.11	-2.303	-0.41
CAR (-3. +3)	-0.162	-0.26	9.470	1.43
CAR (-1 +1)	-0.014	-0.03	11.702	2.70***
CAR (-1 0)	-0.052	-0.16	10.247	2.90***

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

Table 7 presents the cumulative abnormal returns computed using the market model. The bidders follow the same trend, while targets acquire high percentages of CARs. Especially the CARs based on the market model appears to hold more significant prices in various time intervals, such as -10 +10, -5 +5, -5 -1, -3 +3, -1 +1, -1 0.

Table 7: Cumulative Abnormal Returns for targets and acquirers –Market model

	ACQUIRERS		TARGETS	
	CAR %	t-student	CAR %	t-student
CAR (-10+10)	-0.222	-0.11	18.287	3.61***
CAR (-10 -1)	0.086	0.06	3.717	1.06
CAR (+1 +10)	-0.150	-0.11	3.479	1.00
CAR (-5 +5)	-0.227	-0.16	16.797	4.58***
CAR (-5 -1)	0.209	0.22	5.008	2.03**
CAR (+1 +5)	-0.277	-0.29	0.697	0.28
CAR (-3. +3)	1.051	0.93	13.576	4.64***
CAR (-1 +1)	0.610	0.82	13.268	6.93***
CAR (-1 0)	0.139	0.23	11.206	7.17***

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively

The findings in previous studies are mixed, Beitel and Schiereck (2001) or CyboOttone and Murgia (2000) provide an intensely positive assessment of bank mergers, which means that both target and bidder shareholders reap significantly positive cumulative abnormal returns on M&As announcement dates. Nevertheless,

Isamil and Davidson (2005) and Asimakopoulos and Athanasoglou (2009) found that abnormal returns of the targets create significant value at the announcement day, 2,01% and 2,03%, while for the CARs of the interval (-20, +20) is at 8,03%.

5.2 Determinants of abnormal returns

As already found, the target's abnormal returns are positive and statistically significant. Therefore, I attempt to detect the determinants of this abnormal behavior by conducting a multivariate regression analysis. Certain studies tried to analyze the factors that explain the M&A success in the European banking industry (Campa and Hernanod, 2006, Beitel et al., 2003). Their goal is to investigate the causes of the success, and the ability to anticipate it. However, the results of abnormal returns are not strictly related with the fundamentals; they interpret that it is difficult for investors to evaluate and foresee the future course of the merged banks at the announcement date.

In this study, I used the abnormal returns of day 0 as the dependent variable. Before performing the regression analysis, I check for possible multicollinearity among the control variables. Table 8 contains the correlation matrix among the variables. It reveals that certain independent variables which are highly correlated. For example, the correlation of the announced total value of the merger with the non-interest expenses is 0.711, the non-interest expenses with the target's size is 0.745 and the return on equity ratio with return on assets ratio is 0.986. All these three variables are highly and positively correlated in between. Besides, they appear to be correlated with the abnormal returns of the target at the announced day of the deal. So, it should be avoided to include these variables into one regression model. In addition, there are some other variables that present some distinct correlation, such as beta coefficients (slope) of the targets with the nature of bid, which may mean that if an offer is friendly or hostile, it can be related with the target's host country.

Table 8: Correlation matrix

CORRELATION MATRIX	AR_TARGET_MRK_MODEL_EL_	ANNOUNCED_TOTAL_VALU_E_L	ANNOUNC_C_PREMIUM	BETA_SLOPE	BIDDER_SIZE	METHOD_OF_FINANCING_1_H	NATURE_OF_BID	NON_INTEREST_EXPENSE_TAR	ROA_TARGET_T_	ROE_TARGET_T_	SIZE_TARGET_LN_TOTAL_AS
AR_TARGET_MRK_MODEL_EL_	1	0.02	0.85	-0.18	0.22	-0.12	0.21	-0.36	0.27	0.22	-0.53
ANNOUNCED_TOTAL_VALU_E_L	0.02	1.00	0.07	0.06	-0.38	-0.16	0.12	0.71	0.40	0.41	0.40
ANNOUNC_C_PREMIUM	0.85	0.07	1.00	-0.29	0.30	-0.20	-0.08	-0.26	0.33	0.28	-0.30
BETA_SLOPE	-0.18	0.06	-0.29	1.00	-0.34	-0.26	0.52	0.27	-0.24	-0.22	0.21
BIDDER_SIZE	0.22	-0.38	0.30	-0.34	1.00	-0.01	-0.28	-0.40	0.38	0.34	-0.10
METHOD_OF_FINANCING_1_H	-0.12	-0.16	-0.20	-0.26	-0.01	1.00	-0.31	-0.23	-0.24	-0.28	-0.27
NATURE_OF_BID	0.21	0.12	-0.08	0.52	-0.28	-0.31	1.00	0.00	0.04	0.08	-0.37
NON_INTEREST_EXPENSE_TAR	-0.36	0.71	-0.26	0.27	-0.40	-0.23	0.00	1.00	0.02	0.03	0.74
ROA_TARGET_T_	0.27	0.40	0.33	-0.24	0.38	-0.24	0.04	0.02	1.00	0.99	0.11
ROE_TARGET_T_	0.22	0.41	0.28	-0.22	0.34	-0.28	0.08	0.03	0.99	1.00	0.12
SIZE_TARGET_LN_TOTAL_AS	-0.53	0.40	-0.30	0.21	-0.10	-0.27	-0.37	0.74	0.11	0.12	1.00

Taking the correlation of some variables into consideration, I end up with four regression models which are reported in Table 9.

Table 9: Regression Models

Regression Models	1	2	3	4
Independent Variables				
Announced Value(AV)	0.016 (0.75)			0.057 (1.86) *
Announced Premium(APR)	0.004 (4.58) ***		0.004 (7.60) ***	
Beta (B)	0.056 (1.09)			0.002 (0.04)
Bidder Size (BS)	0.002 (0.30)			0.014 (1.50)
Method of Financing (MF)	-0.015 (-0.19)			-0.169 (-1.21)
Nature of Bid (NB)			0.226 (3.14) ***	
Target Size (TS)	-0.047 (-2.71) ***		-0.027 (-1.67) *	-0.073 (-3.06) ***
Return on Equity (ROE)	0.001 (0.098)			-0.001 (-0.48)
Return on Assets (ROA)		0.023 (2.21) **		
Non-Interest Expense (NIExp)		-0.038 (-1.80) *		
Adjusted R-squared	0.72	0.10	0.79	0.22
F-statistic	7.47	2.40	24.91	2.07
No of observations(after adjustments)	19	27	19	24

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level respectively.

In the model 1 the announced premium appears to have a significant positive effect on the abnormal returns, which indicates that when the bidders are willing to pay more for acquiring a target bank, then the shareholders of the latter enjoy price

appreciations. In general, the price paid for the target may be higher or lower than the market price at the time of completing the deal because of the economic fluctuations. On the contrary, the target's size has a significant negative impact on the ARs, which means that smaller targets in size with limited total assets or less profitable may receive more benefits than larger target banks. It may also be pointed out that larger and more profitable bidders can create value for their shareholders by bidding smaller and less profitable banks as it is easier to efficiently proceed with the necessary re-organization needed (Asimakopoulos and Athanasoglou. 2009).

In the second regression model, the return on assets ratio (ROA) has a significant positive impact on the ARs, while the non-interest expense has a significant negative influence. ROA is a profit efficiency measure, while non-interest expense is a cost efficiency measure; the greater the ROA the more profits and returns for the target are, while the lower the non-interest expenses the better the outcome for ARs.

In the third regression model, the announced premium, the nature of bid and the target's size play a strongly significant role for the target's ARs. Again, the announced premium has a positive effect on the ARs, while the target's size has a negative effect. The dummy variable of nature of bid (which takes the value of 1 in case of hostile transactions) appears to have a positive effect on the returns. This is consistent with the previous literature which showed that hostile takeovers are more likely to generate higher returns.

Model 4 includes six independent variables, but two of them show significant coefficient: the announced value and the target's size. This model reveals that the target's ARs have greater prices, when the managers announce higher announced value for the deal. In addition, the abnormal returns augment, when the deals involve smaller targets in size.

In general, the results are in line with the majority of studies that report value creation for the targets' shareholders even though certain studies which deal with European banks (Cybo-Ottone and Murgia, 2000; Beitel and Schiereck. 2001; Ismail and Davidson. 2005) claim that European acquirers do not generally pay high prices for target banks.

5.3 Long-term evolution

Previous studies have tested the post-merger changes in performance for both targets and acquirers. For example, Berger et al. (1999) examined the post-merger profitability by using ROE and ROA ratios. In addition, there are studies which analyze the cost efficiency and provided evidence that bank mergers produce few or no benefits in terms of cost reductions. However, there is some evidence of cost efficiency when M&As involve participants with smaller efficiency than their peers. A study of Vander Venet (2002) observed the cost and profit efficiency for a sample of European cross-border M&As and found that they produce profit but not cost efficiency. Hagendorff and Keasey (2009) provided evidence of lower cost ratios with reductions in lending activity for the post-merger period by studying European bank mergers.

In order to examine the post-merger effects, I compare changes between one year before the deal (-1) and one year after (+1) the announcement as well as the change between years (-1) and (+2). The mean and the median differences are computed and tested by using tests of equality. I split the outcomes in three tables.

Table 10 presents the mean and the median changes of certain profitability ratios (ROE, ROA, and EPS). The Table shows that only the EPS ratio changes dramatically. In fact, it undergoes a 97.49% decline during the period (-1 +1) and a negative trend of 97.29% between years (-1 +2). However, this change does not appear to be statistically significant. The rest results do not experience statistically significant changes.

Table 10: Long-term change – Profitability Ratios

ACQUIRERS	ROE (-1)	ROE (+1)	ROE (-1)	ROE (+2)	ROA (-1)	ROA (+1)	ROA (-1)	ROA (+2)	EPS (-1)	EPS (+1)	EPS (-1)	EPS (+2)
Mean	15.33	15.48	15.33	14.69	0.69	0.68	0.69	0.66	139.35	3.50	139.35	3.77
Mean Change %	1.01		-4.17		-0.54		-3.58		-97.49		-97.29	
p-value	0.90		0.60		0.96		0.73		0.31		0.32	
median	16.10	14.79	16.10	13.90	0.59	0.59	0.59	0.56	0.99	1.39	0.99	1.19
median change %	-8.16		-13.68		-0.02		-4.91		40.38		19.69	
p-value	0.47		0.1231		0.60		0.39		0.43		0.37	

Table 11 shows that total assets experience significant changes in both time periods (change of 27.19% and 47.47% respectively). Additionally, the total shareholders' equity also presents significant change in long-time period. That is 29.74% for (-1 +1) and 55.39% for (-1 +2) period

Table 11: Long-term change- Total assets and Total shareholders' equity

ACQUIRERS	Total assets (-1)	Total assets (+1)	Total assets (-1)	Total assets (+2)	Total Shareholders' equity (-1)	Total Shareholders' equity (+1)	Total Shareholders' equity (-1)	Total Shareholders' equity (+2)
Mean	682646.80	868298.15	682646.80	1006701.43	28888.77	37481.82	28888.77	44893.00
Mean Change %	27.20		47.47		29.75		55.40	
p-value	0.08*		0.01***		0.04**		0.00***	
median	569311.95	770800.50	569311.95	956841.00	28891.00	31670.50	28891.00	34908.00
median change %	35.39		68.07		9.62		20.83	
p-value	0.10*		0.01***		0.12		0.02**	

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level respectively.

Then, in table 12 net income and non-interest expenses provide significant positive changes in long-term. This fact implies that the deal has accomplished its goals and succeeded as it is shown by the improvement of the accounting data.

Table 12: Long-term change - Net income, Non-interest expenses

ACQUIRERS	Net income (-1)	Net income (+1)	Net income (-1)	Net income (+2)	Non-Interest expense (-1)	Non-Interest expense(+1)	Non-Interest expense(-1)	Non-Interest expense (+2)
Mean	4092.42	4896.68	4092.42	5808.25	10816.50	13222.21	10816.50	14649.38
Mean Change %	19.65		41.92		22.24		35.43	
p-value	0.29		0.08 *		0.06 *		0.00 ***	
median	3121	3698.59	3121	3529	12469.79	14326	12469.79	16273
median change %	18.50		13.07		14.88		30.49	
p-value	0.26		0.17		0.05* *		0.01***	

Note that *, **, *** denote statistical significance at the 10%, 5% and 1% level, respectively.

6. Conclusion

This study examines a sample of completed cross-border mergers and acquisitions in Western Europe between 1999 and 2010. First, it analyzes the short-term reaction of both bidders and targets to the announcement of M&As. Additionally, it gauges the long-term operating performance of the both participants of the deal. Employing the event study methodology, we found that targets experience significant positive abnormal returns, while bidders undergo non-significant price changes. This finding is generally in line with that of previous literature (e.g. Madura and Wait, 1994, Zhang, 1999, Campa and Hernado, 2006). The market-adjusted model pointed out a significant targets' AR of 10.271% in 1% significance level at the announcement date, while the market model provided 11.092% AR for the same significance level. As it concerns the acquirers, both models resulted in negative and insignificant returns. In the attempt to interpret these results, I resulted that the announced value, the announced premium, the nature of bid, the target's size and the return on assets ratio are variables that determined the significant prices of abnormal returns.

My study, tried to contribute in the pertinent literature by focusing on a specialized market that have not been much explored. This research may have implications for the managers as well as for the shareholders, especially nowadays where the global economic crisis brings intensely under discussion the issue of mergers and acquisitions. Future research may focus on comparison of different samples of M&A deals in different regions, for example cross-border mergers between US and EU banking industry or between eastern and western banks.

Appendix

(1) Western Europe cross- border bank mergers 1999-2010

	Date Announced	Date Effective	Deal Type	Target Name	Target Country	Acquiror Name	Acquiror Country	Payment Type
1	05/17/1999	05/17/1999	DIV	Irish Intercontinental Bank (KBC Bank Ireland PLC)	Ireland	KBC Bank & Insurance (KBC Groep NV)	Belgium	Cash
2	09/20/1999	03/31/2001	ACQ	Christiania Bank (Nordea Bank Norge ASA)	Norway	MeritaNordbanken (Nordea Bank AB)	Sweden	Cash
3	04/03/2000	10/10/2000	ACQ	Credit Commercial de France (HSBC France)	France	HSBC Holdings PLC{HSBC}	UK	Cash or Stock
4	07/21/2000	02/02/2001	ACQ	Bank Austria AG (Bank Austria Creditanstalt AG)	Austria	Bayerische Hypo- und Vereins (UniCredit Bank AG)	Germany	Stock
5	10/10/2000	06/13/2001	DIV	Banco Urquijo SA	Spain	KBL (KBL European Private Bankers SA)	Luxembourg	Undisclosed
6	10/31/2000	03/19/2001	ACQ	Credit Lyonnais Portugal	Portugal	BBVA Portugal SA	Spain	Cash

7	11/17/2000	11/17/2000	ACQ	P-H Bank A/S	Denmark	BIL SA (Dexia SA)	Belgium	Undisclosed
8	12/22/2000	12/31/2000	DIV	Bikuben Girobank International (Dexia Nordic Private Bank Luxembourg SA)	Luxembourg	BIL SA (Dexia SA)	Belgium	Undisclosed
9	01/02/2001	12/31/2001	DIV	Banque Baumann & Cie SA	Luxembourg	Verwaltungs und Privatbank AG	Switzerland	Undisclosed
10	01/15/2001	01/15/2001	ACQ	Kommunalkredit Austria AG (KA Finanz AG)	Austria	Dexia SA	Belgium	Undisclosed
11	01/29/2001	12/31/2001	DIV	Banque Generale du Commerce	France	ABN AMRO Bank NV (RBS Holdings NV)	Netherlands	Undisclosed
12	01/30/2001	04/02/2001	DIV	Barclays Bank PLC Greece (BBPG).Barclays AEDAK	Greece	HSBC Holdings PLC{HSBC}	UK	Undisclosed
13	02/22/2001	03/31/2001	ACQ	Banque Hervet SA(France)	France	Credit Commercial de France (HSBC Holdings PLC)	UK	Cash
14	04/11/2001	07/24/2001	ACQ	Midtbank A/S (Handelsbank en Midtbank A/S)	Denmark	Svenska Handelsbanken AB	Sweden	Cash and Stock
15	11/22/2001	12/31/2001	DIV	Financiere Groupe Dewaay(CCF)	Belgium	Credit Commercial de France (HSBC Holdings PLC)	UK	Cash
16	01/30/2002	01/30/2002	ACQ	Banca Nazionale del Lavoro SpA	Italy	BBVA	Spain	Undisclosed

17	03/14/2002	12/11/2002	DIV	Cortal SA(Dexia Belgium)	Belgium	BNP Paribas SA	France	Undisclosed
18	05/16/2002	06/07/2002	DIV	SanPaolo IMI SpA	Italy	Deutsche Bank AG	Germany	Undisclosed
19	06/12/2002	06/12/2002	DIV	Artesia Bank Luxembourg SA	Luxembourg	Banca Lombarda e Piemontese SPA	Italy	Undisclosed
20	09/17/2002	12/20/2002	ACQ	Delbrueck & Co	Germany	ABN-AMRO Holding NV (RBS Holdings NV)	Netherlands	Undisclosed
21	10/07/2002	12/31/2002	DIV	Banca Carime SpA	Italy	Deutsche Bank AG	Germany	Undisclosed
22	01/02/2003	09/15/2003	DIV	IntesaBci Bank(Suisse) (Banca Intesa Spa/Switzerland)	Switzerland	Credit Agricole Indosuez	France	Undisclosed
23	01/09/2003	07/28/2003	ACQ	BNC (Banco Popolar Portugal SA)	Portugal	Banco Popular Espanol SA	Spain	Stock
24	02/03/2003	05/30/2003	ACQ	Eurofin (Banque Eurofin SA)	France	Credit Commercial de France (HSBC Holdings PLC)	UK	Cash
25	02/05/2003	03/31/2003	DIV	Rud Blass & Cie AG Ltd Bank	Switzerland	Deutsche Bank (Suisse) SA	Germany	Undisclosed

26	03/05/2003	01/15/2004	ACQ	FI Holding A/S	Denmark	FoereningsSparbanken AB (Swedbank AB)	Sweden	Undisclosed
27	04/09/2003	04/09/2003	ACQ	Eurofin (Banque Eurofin SA)	France	HSBC Holdings PLC	UK	Cash
28	04/28/2003	06/30/2003	DIV	Bunadarbanki International SA	Luxembourg	Landsbanki Islands hf	Iceland	Undisclosed
29	05/08/2003	11/21/2003	ACQ	Banco Zaragozano SA	Spain	Barclays Bank SA	UK	Cash
30	09/22/2003	09/30/2003	DIV	Dexia Hypothekenbank (Dexia Kommunalbank Deutschland AG)	Germany	Dexia France(Dexia Belgium)	Belgium	Undisclosed
31	10/09/2003	12/31/2003	DIV	Bank von Ernst & Cie AG	Switzerland	Coutts Bank(Schweiz)AG (Royal Bank of Scotland Group PLC)	UK	Cash
32	12/10/2003	01/30/2004	DIV	Bankhaus Gebrueder Bethmann	Germany	ABN-AMRO Holding NV	Netherlands	Cash
33	01/19/2004	03/05/2004	DIV	General Hellenic Bank	Greece	Societe Generale SA	France	Cash

34	03/30/2004	08/05/2004	ACQ	Geniki Bank of Greece SA	Greece	Societe Generale SA	France	Cash
35	04/13/2004	04/13/2004	DIV	Banco Urquijo SA	Spain	KBL European Private Bankers	Luxembourg	Undisclosed
36	07/23/2004	11/15/2004	ACQ	Abbey National PLC (Santander UK PLC)	UK	Santander Central Hispano SA	Spain	Stock
37	08/12/2004	01/04/2005	ACQ	Kredittbanken ASA	Norway	Islandsbanki hf	Iceland	Cash
38	09/20/2004	12/31/2004	DIV	Bank Von Ernst(Monaco) SAM	Monaco	BNP Paribas SA	France	Undisclosed
39	11/15/2004	05/10/2005	ACQ / DIV	Bolig-og Naeringsbanken AS	Norway	Islandsbanki hf (Glitnir Banki HF)	Iceland	Cash
40	11/25/2004	03/31/2005	DIV	Amer Express Bk- (Private Banking ops/Luxembourg)	Luxembourg	UBS AG	Switzerland	Undisclosed
41	12/14/2004	03/01/2005	DIV	National Irish Bank Ltd	Ireland	Danske Bank A/S	Denmark	Cash
42	12/23/2004	12/31/2004	DIV	Danske Bank A/S (Copenhagen based bank)	Denmark	Lloyds TSB Bank PLC	UK	Undisclosed
43	01/25/2005	04/27/2005	ACQ	Novabank SA	Greece	Banco Comercial Portugues SA	Portugal	Undisclosed

44	03/14/2005	12/31/2005	ACQ	Bankia Bank	Norway	Santander Central Hispano SA	Spain	Cash
45	04/19/2005	12/31/2005	DIV	Nachenius Tjeenk & Co NV	Netherlands	BNP Paribas Banque Privee SA	France	Undisclosed
46	04/25/2005	11/08/2005	ACQ	Privatbanken ASA (SEB Privatbanken ASA)	Norway	Skandinaviska Enskilda Banken	Sweden	Cash
47	04/26/2005	10/01/2005	DIV	Effectenbank Stroeve NV	Netherlands	KBL European Private Bankers (KBC Groep NV)	Belgium	Undisclosed
48	06/13/2005	11/30/2005	ACQ	Bank Austria Creditanstalt AG (Unicredit Bank Austria AG)	Austria	Unicredito Italiano SpA (Unicredit Spa)	Italy	Cash or Stock
49	09/14/2005	04/06/2006	DIV	Banca Antonveneta SpA	Italy	ABN AMRO Bank NV (RBS Holdings NV)	Netherlands	Cash
50	09/22/2005	09/22/2005	ACQ	Banco Comercial Portugues SA	Portugal	Fortis SA/NV (Ageas)	Belgium	Cash
51	11/10/2005	12/31/2005	DIV	Bank von Ernst(Liechtenstein)	Liechtenstein	EFG International	Switzerland	Undisclosed

52	02/03/2006	07/24/2006	ACQ	Banca Nazionale del Lavoro SpA	Italy	BNP Paribas SA	France	Cash
53	06/13/2006	08/24/2006	ACQ	Emporiki Bank SA	Greece	Credit Agricole SA	France	Cash
54	09/20/2006	07/03/2007	ACQ	Laiki Bank(Hellas)SA	Greece	Cyprus Popular Bank Ltd	Cyprus	Stock
55	10/11/2006	03/01/2007	DIV	Banca Popolare Friuladria / Cassa di Risparmio di Parm & Piacenza spa	Italy	Credit Agricole SA	France	Cash
56	11/09/2006	02/01/2007	DIV	Sampo Bank PLC	Finland	Danske Bank A/S	Denmark	Cash
57	12/07/2006	02/27/2007	ACQ	Bank Linth	Switzerland	Liechtensteinische Landesbank	Liechtenstein	Cash
58	01/24/2007	05/21/2008	ACQ	Bank Austria Creditanstalt AG	Austria	Unicredito Italiano SpA	Italy	Cash
59	05/16/2007	07/02/2007	DIV	Sarasin Europe SA	Belgium	Credit Agricole SA	France	Undisclosed
60	06/01/2007	07/06/2007	ACQ	Banco de la Pequena y Mediana	Spain	BANIF SGPS SA	Portugal	Cash
61	10/15/2007	12/31/2007	ACQ	Lombard Bank Malta PLC	Malta	Marfin Popular Bank Public Co	Cyprus	Cash
62	11/19/2007	02/28/2008	ACQ	Bankinter SA	Spain	Credit Agricole SA	France	Cash

63	07/14/2008	10/10/2008	ACQ	Alliance & Leicester PLC	UK	Banco Santander SA	Spain	Stock
64	08/01/2008	05/25/2009	JV	Insinger de Beaufort Holdings	Luxembourg	BNP Paribas Banque Privee SA	France	Undisclosed
65	09/15/2008	10/29/2008	ACQ	Lokalbanken i Nordsjaelland	Denmark	Svenska Handelsbanken AB	Sweden	Cash
66	09/29/2008	09/29/2008	DIV	Bradford & Bingley PLC-Retail (Deposits)	UK	Abbey National PLC (BANCO Santander SA)	Spain	Cash
67	09/29/2008	10/31/2008	DIV	Roskile Bank A/S-branches (9)	Denmark	Nordea Bank AB	Sweden	Cash
68	10/06/2008	05/12/2009	DIV	Fortis Bank SA/NV	Belgium	BNP Paribas SA	France	Stock
69	11/03/2008	12/31/2008	DIV	Dexia Kommunalkredit Bank AG	Austria	Dexia SA	Belgium	Cash
70	12/19/2008	12/31/2008	DIV	Orgresbank JSB	Russia	Nordea Bank AB	Sweden	Undisclosed
71	07/30/2009	07/31/2009	DIV	Commerzbank AG	Germany	Vontobel Holding AG	Switzerland	Undisclosed
72	10/28/2009	03/15/2010	ACQ	Sal Oppenheim jr & Cie SCA	Luxembourg	Deutsche Bank AG	Germany	Undisclosed

73	11/16/2009	04/01/2011	ACQ	Marfin Egnatia Bank SA	Greece	Marfin Popular Bank Public Co	Cyprus	Stock
74	02/17/2010	01/03/2011	DIV	Cassa di Risparmio della Spezia	Italy	Credit Agricole SA	France	Undisclosed
75	02/18/2010	01/03/2011	DIV	Carispe (Cassa di Risparmio della Spezia)	Italy	Cassa di Risparmio di Parma e piacenza spa(of Credit Agricole SA)	France	Cash
76	07/12/2010	01/31/2011	DIV	SEB-Retail Banking Business	Germany	Santander Consumer Bank AG	Spain	Undisclosed

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