PREFACE

This paper implies that we receive the graduation Master of Science in Business Administration and Economics with specialization in Finance.

Through these lines we would like to underline the efficiency and the pleasure we had to work together during a certain and consequent number of hours during we could exchange ideas, points of views and critics.

The greatest gratitude goes to Per Nilsson, assistant professor in the department for Business Administration, who has supervised us during the research. The discussions, feedbacks and the time he gave to us, have resulted in valuable and thoughtful insights, which were determinant in the conduct of this study.

Despite the help we have received from our supervisor and the reliable sources used, the responsibility for any faults in this thesis remains entirely ours. Feel free to contact us regarding any issues in this paper.

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ABSTRACT

Takeover is a business activity which really started in the beginning of the eighties and which still takes a strong part in the business and financial area all over the world. According to our studies as the desire for further acknowledgements and the desire of building a career around financial activities, this study has been naturally conducted in the banking area.

Regarding the steady use of acquisition like a powerful process with some positive and negative sides, we decided to implement a comparison of different mergers and acquisitions in the banking industry in the United States and Europe. This comparison has been supported and based on the third main topic of our study: performance. These large and complex subjects combined together lead to the following hypotheses:

Hypothesis 1: Performance is not improved after takeover in the banking industry.

Hypothesis 2: The level of post takeover performance is the same in the U.S. as in the European bank acquisitions.

Based on the historical data and knowledge, the United States was the pioneer in the development of such gatherings in the banking sector. Considering the United States as a reference, a first purpose was to compare them with the bank mergers and acquisitions in Europe. Stating on some possible differences as increasing our own knowledge have been some others purposes which have supported our work.

A first large part of our work was focused, through a large literature review, on the enhancement of our knowledge as the statements of the basis and support for the analysis.

To illustrate and to try to answer our research question, we have conducted our study based on a sample of 20 acquisitions which were achieved in the banking industry between March 1998 and May 2004. 10 of these acquisitions had been achieved in the United States as the 10 remaining acquisitions had been executed in Europe.

The analysis has been achieved by collecting data in Thomson Datastream Advance. Based on a quantitative method, we applied two financial models: The Market Model (MM) and the Market-Adjusted Returns Model (MAR) supported by the Cumulative Abnormal Returns Method (CARs).

The post-takeover study has been delimited on a period of 42 months after the public announcement.

The study and the comparison between the United States and Europe have shown some differences between the two areas. Nevertheless it seems that negative abnormal returns are usually the case after such takeovers on the whole period studied. Some positive abnormal returns have been recorded at different points in the time into the studying period. According to the models we applied, the US banks results seem to be better than the ones of European banks: the differences range from 5,58 to 16,65 points under the MM, and from 1,66 to 18,08 points under the MAR model.

Key words: Abnormal returns, acquisition, Cumulative Abnormal Return method, Market Model, Market-Adjusted Returns Model, banking industry, post-takeover performance,

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Chapter 1
INTRODUCTION
Created in 1923 by Joseph Bear and Robert Stearns, listed on the New York Stock Exchange (NYSE) since 1985, the business bank Bear Stearns\(^1\) ended its 85 years of independence on the 30th of May 2008. Indeed the fifth American business bank had been acquired by JPMorgan Chase bank for a consequent amount of 2,3 billions US Dollars. This new acquisition may be directly linked to the subprime crisis which has created since the summer 2007 a new financing and banking network where mergers and acquisitions are mainly involved as a survival solution for many entities.

Our study will be mainly based on three large topics: the takeover activity, the banking industry and post-takeover performance. Therefore, a first part of the following introduction will deal with takeover activity; a second part will give us the opportunity to focus on the banking industry and then dealing with performance on a third part.

1. **Background**

1.1. **The takeover activity**

Takeover\(^2\) is a business activity which really started in the beginning of the eighties and which still takes a strong part in the business and financial world. It might be defined in a simple way as a purchase of one company, the target, by another one, the acquirer or bidder. The takeover process has for main consequence the creation of large firms with a concentration of equity ownership.

As takeover activities are so large and extensive, we can observe many different kinds of takeovers. We might present here briefly and on a large overview this phenomenon.

1.1.1. **Hostile or friendly**

First, we can distinguish two large kinds\(^3\) of takeovers: friendly and hostile ones. Indeed, before a bidder makes an offer for another company, it usually first informs that company's board of directors. If the board feels that accepting the offer serves shareholders better than rejecting it, it recommends the offer to be accepted by the shareholders. It might be viewed as a friendly takeover. A takeover might be considered "hostile" if the board rejects the offer, but the bidder continues to pursue it, or if the bidder makes the offer without informing the board.

1.1.2. **Public or private**

Second we can distinguish public and private acquisition.

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\(^{1}\) La Tribune, French newspaper website, Available: <http://www.latribune.fr/info/IDC6F17680D414B88AC1257458004FF7F> (1 June 2008)


In a private company, the shareholders and the board are usually the same people or closely connected with each other. So, private acquisitions are usually friendly, because if the shareholders agree to sell the company then the board is usually of the same mind or sufficiently under the orders of the shareholders to cooperate with the bidder.

In our study, we will focus on the acquisition of public company listed on financial markets.

1.1.3. Different types of strategies

Third we can underline the different types\(^4\) of strategies that might be realized. A takeover might be on a firm which is in the same industry as the bidder or in different industries. We might talk in the case of different industries about conglomerate acquisition. We can deal with vertical integration, which takes into account the different steps and processes needed to implement a product or a service from backward to forward. It could be for example a firm which might acquire one of its suppliers. We can deal with a horizontal integration too which gathers several companies at the same level of the production or service process.

According to Ross, Westerfield, Jaffe and Jordan\(^5\), takeovers deal with different forms of acquisition, it follows one of the three following basic forms: merger or consolidation, acquisition of stock, and acquisition of assets. A merger refers globally to the absorption of one firm by another: the acquired company does not exist anymore; it is only the acquiring firm which still exists. A close form is the consolidation where an entirely new firm is created. A second large way of acquisition is to purchase the firm’s voting stock: it is often based on a tender offer which is a public offer to buy shares of a target firm. A third basic form is an acquisition of one firm by buying all of its assets.

We will focus and deal in this study with takeovers\(^6\) accomplished in the same sector of banking for both the bidder and the target company.

1.1.4. Some reasons for acquisitions

Fourth we could study the reasons\(^7\) why takeovers are processed. This question cannot be answered easily regarding all the possibilities and situations in the past. We might answer here on an overview basis.

Firms can merge for strategic reasons to improve operational or financial synergies. These synergies might be implemented through cutting of costs and risks and economies of scale. We could observe too that many mergers have occurred for growth and for increased market power. In recent years, these kinds of mergers seem to be popular with pharmaceuticals, oil companies, telecommunication firms and particularly banks.

A takeover might be realized to create an Empire building too, which is sometimes the case when we may observe a very large diversification: a diversification which might be extreme if the businesses which are joined together are really different. For instance, General Electric’s acquisition of the television company, NBC, in the United States, during the 1980’s, is a common example of an extreme diversifying merger.

\(^6\) All along this study, we will use the term takeover as acquisition on a general and global basis to define and to take into account all the different strategies or examples that we could meet and which might exist.
A takeover might be implemented too in order to convert an unsuccessful firm, which would be acquired at a low price, into a successful one, which could be sold back at a higher price or could be largely profitable. Some mergers might be both synergistic and diversifying: for instance the Morgan Stanley\(^8\) and Dean Witter in 1997 merger brings together an investment bank that underwrites securities and a retail brokerage firm that sells securities.

1.1.5. **Supports for acquisitions**

Fifth we could analyze more deeply the way of payment in such acquisitions. Different tools are available and used by the different actors of the market: payment and transaction can be made with cash holdings, borrowed money (Leveraged Buyout for instance) and most often with acquisitions of stocks.

1.2. **The banking industry**

1.2.1. **A commercial role**

This part will allow us to present briefly the banking sector. A banker or bank is a financial institution that acts as a payment agent for customers, borrows and lends money.

Parallel to the first banking role of such financial institutions, we can observe the commercial\(^9\) role of banks, which is central in the conduct of the business. Indeed this commercial role is wider than the first banking role of lending and borrowing money. Described as profit-seeking and risk-averse institutions, commercial banks deal with such activities like issuing banknotes (promissory notes issued by a banker and payable to bearer on demand), processing payments by way of telegraphic transfer, internet banking or other means, issuing bank drafts and bank cheques, providing documentary and standby letters of credit, guarantees, performance bonds, currency exchange, sale, distribution or brokerage. A bank could be summed up as the largest “financial supermarket” for personal and professional goals.

1.2.2. **Types of banks**

Banks' activities\(^10\) can be divided into retail banking, dealing directly with individuals and small businesses; business banking, providing services to mid-market business; corporate banking, directed at large business entities; private banking, providing wealth management services to high net worth individuals and families; and investment banking, relating to activities on the financial markets.

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Nowadays, we can observe a high concentration of these different activities inside the same bank. Indeed regarding the worldwide level of competition and the necessity to acquire a certain level of profitability on a very contrasted and excessive market, banking groups have to present a large services program for private and particularly professional customers.

1.2.3. **Size of global banking industry**

Following the same reasons as the concentration of banking activities mentioned above, we could observe a globalization of financial markets in which banks are fully implicated. This requirement for a certain size implies a concentration of banking entities and therefore an increase of the global assets for each large group.

Indeed, according to the report of the International Financial Services\(^{11}\) in London on March 2006, worldwide assets of the largest 1,000 banks grew from 15.5% in 2005 to reach a record of $60.5 trillion. This follows a 19.3% increase in the previous year. EU banks held the largest share, 50% at the end of 2005, up from 38% a decade earlier. The growth in Europe share was mostly at the expense of Japanese banks whose shares were more than halved during this period from 33% to 13%.

The share of US banks also rose, from 10% to 14% and most of the remainder was from other Asian and European countries. The US had by far the most banks (7,540 at end-2005) and branches (75,000) in the world. The large number of banks in the US is an indicator of its geography and regulatory structure, resulting in a large number of small to medium sized institutions in its banking system. Japan had 129 banks and 12,000 branches. In 2004, Germany, France, and Italy had more than 30,000 branches each—more than double the 15,000 branches in the UK.

The banking industry presents an activity which is more and more intensive, large and global. Indeed we might observe all over the world a concentration of bank companies to be able to be still competitive in front of the large groups which are created. We may observe here a vicious circle where we can wonder when and how such concentration might be slowed down: competitiveness and financial power are surely two main determinants in this process.

1.3. **Performance**

1.3.1. **A definition of performance**

Performance is a notion that can be defined on several approaches. We could deal with human performance or material performance in an economic world. We may add here that of course, performance might be defined, illustrated and discussed in the social, economic, or sportive world as in many others areas too.

Human performance would be more dealt with human resources in a business, studying the performance of employees and performance appraisal. Our research in this study will be

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directly linked to the economic and business area and naturally based on operating and financial performance.

On a large and general view, we could personally define performance as a positive evolution in the time and in the intensity of a material or immaterial process. There is a real difference and gap between, two time points, in the state of a certain process.

We want to observe and to analyze the post-takeover performance in the banking industry. Even in this specific area, different kinds of performance may be defined as operating performance or financial performance.

1.3.2. **The operating performance**

Operating performance\(^\text{12}\) is based on the concrete performance of the company resulting of an activity and processes implemented by the business to obtain any gains compared to an initial and previous time $0$. Operating performance is usually estimated in the companies thanks to some ratios. Indeed we can understand and deal with performance through the concept of profitability, which is largely the case in corporate finance.

Based on the Accounting Dictionary Barron’s Educational Series, performance may be defined as a measure of profitability to sales to determine the return earned on the revenue generated. Some operating performance ratios are the profit margin (net income to sales), gross margin ratio (gross margin to sales), and operating profit margin (operating income to sales). The higher these ratios, the better the profitability earned on the company’s sales.

In parallel corporate business may analyze performance on a financial basis.

1.3.3. **The financial performance**

According to Investopedia\(^\text{13}\) database, the financial performance may be defined as a subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. We can observe the financial performance of a business in the Income Statement regarding financial income and returns or considering the balance sheet and taking into consideration the financial investments and the cash evolution of the business. This term is also used as a general measure of a firm's overall financial health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

We talk about financial performance when we may observe the stock price evolution on the financial market. A positive evolution let us to conclude on a certain performance of the stock.

There are many different ways of measuring financial performance: most of them are taken in aggregation. As different aggregations might be used, different models exist too to deal with performance.


An example of performance computation combining financial and operative may be the analysis of asset performance. Asset performance defines a business ability to take productive resources and manage them within its operations to produce subsequent returns. A strong asset performance may illustrate the good opportunity of investment that this business represents.

Different models and methods are usually used to assess and compare a performance, operative or financial one, and depending on the purposes of the different stakeholders. In the same way, different metrics can be used to analyze asset performance: cash conversion cycle, returns on assets ratio or the fixed asset turnover ratio.

2. **Statement of research question**

From a logical and practical point of view considering the nature of our school studies in Finance, the internships we did in the Financial sector, as well as the desire of building a professional career in this area, supported by an undeniable interest for the theme, we decided to focus and centralize our work on the banking network, which is a core element in the financial institutions and the economic system.

On a second step, we could notice the large and weighty level of mergers and acquisitions in this sector supported by a range of determinants, which may be mostly confirmed all over the world. Indeed mergers and acquisitions have taken a large part in the evolution and development of the banking network as in many other networks. Mergers and acquisitions is a large and dynamic topic, which attracted our interest to go further and deeper in our knowledge of such a theme.

Considering the consequent evolution of this acquisition process, which still goes on, one question was rapidly emerging: *Is performance improving after takeover in banking industry?*

A relative high performance could be viewed as a strong determinant in the merger process, it is one of the points we will try to observe and determine in our study.

3. **Statement of the purposes**

Based on the historical data and knowledge, the United States were the pioneer in the development of such gathers in the banking sector. Considering the United States as a reference, a first purpose was to compare them with the banking mergers and acquisitions in Europe.

A way of comparing these mergers and acquisitions was rapidly defined: such comparison had to be based on a study of the performance between these two geographical areas. We saw that performance could be viewed, observed and analyzed on different points and criteria, depending on several models and methods. By applying certain models that we will describe in the third part, we could finally define a performance rank between these two areas based on a financial performance and then assume a better performance of the US mergers or on the contrary of the European mergers.
Thus a second purpose in this study is to determine and to analyze a certain performance or not that may result of a merger and acquisition process in the banking sector and if we could observe and conclude on the better efficiency of one of the geographical areas.

Considering our relative narrow study regarding the importance of this thema, we may argue here that another purpose of this study is to acquire through a dense literature review and effective researches, a higher knowledge and understanding of such an interesting thema.

This figure allows us to get a general overview of the main themes which leaded us to establish such a research question, to state some purposes and to deal with them all along this work.

4. **Thesis guideline**

Following this short and brief presentation of the takeover principle, the banking industry, and the concept of performance, we will present in a first step in chapter two, through our literature review, a large and global view of the takeover activity in general and in the banking industry considering different articles and works on these two areas, mainly based on performance.

The chapter three will allow us to present the research methodology we used to conduct this study.
By collecting data about bank mergers and acquisitions in the United States and Europe, we will, through a quantitative analysis, be able to study in the chapter four the post-takeover performances and compare them.

A summary and conclusive chapter will give us the opportunity to state on the enhancement or not of post-takeover performance in banking industry. We will conclude by giving a critical point of view on this work and then by giving any recommendations on this topic.
Chapter 2
REVIEW OF
ACADEMIC LITERATURE
This chapter will enable to get a larger and better understanding of the three concepts (takeover, bank and performance) that we introduced in the chapter one. We decided to divide our literature review into two main parts, from a theoretical study of takeovers in general on a first part, to a study focused on takeovers in banking industry on a second part. Different cases as methods and approaches will be studied and discussed. This literature review enables to give a real theoretical side to our study. In addition to this, one of our goal was to get much more knowledge on the large topic that deals with takeovers and post performance in banking industry.

1. Analysis of articles about takeovers

A first part of this academic literature will consist in examining takeover theories and studies, based on a global and general side.

1.1. Takeover as a creation of value

*Based on Jensen and Ruback*14 researches.

**Report**

According to Jensen and Ruback15, the real winner in a takeover situation is much more the target firm than the acquiring firm. “The evidence indicates that corporate takeovers generate positive gains, that target firm shareholders benefit, and that bidding firm shareholders do not lose” (p.2). For the bidding company, no substantial gains appear and especially not from “the creation of market power” as the authors stated. They synthesize the evidence to find the variation of abnormal percentage stock price depending on the success or not of the takeover bids - merger, tender offer, proxy contest - for both target and bidder companies. They also quote Asquith, Bruner and Mullins16 about the fact that “the abnormal returns of bidding firms depend on the relative size of the target”. The two authors put also forward the role of antitrust instruments as the source of possible merger gains (p.23).17

The main results are anyway that “both bidders and targets suffer small negative abnormal stock price changes in unsuccessful bids” and “bidding firms realize statistically significant abnormal gains of 4% in tender offers and zero in mergers” (p.5). There are many potential explanations about these post outcomes negative abnormal returns. But since the bidding firms do not lose, “the evidence suggests that takeovers create value”.18

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15 Ibid
18 Ibid
Critical analysis

As other researchers mentioned, the construct validity used in the paper presents some weaknesses. As the abnormal returns are measured by the difference between actual and expected stock returns, the main issue comes from the way the expected stock return is determined. They mainly based their computation on Dodd and Ruback\(^\text{19}\) approach. As Andrade G., Mitchell M., Stafford E.\(^\text{20}\) underline, “the bottom line is that if long-term expected returns can only be roughly estimated, then estimates of long-term abnormal returns are necessarily imprecise.” So there may be statistical weaknesses about the evaluation for long-term period assuming also an equilibrium market and that abnormal return is independent across firms. As it may not be the case, the statistical and internal and constructive validity are probably not totally verified.

1.2. The difficulty to state on post-takeover performance

Based on Agrawal and Jaffe\(^\text{21}\) researches.

Report

Sharing the conclusion of Roll\(^\text{22}\), Agrawal and Jaffe\(^\text{23}\) think that the hypothesis of zero abnormal performance to acquirers should not be rejected (p.2). So Agrawal and Jaffe\(^\text{24}\) main research is based on the answer of the validity of negative post-acquisition performance as suggested by the accumulated evidence. They also take a part of their study to understand the possible explanations for the literature findings on long-run performance. After testing many methodologies of long-term return studies, for instance Bradley and Jarrell\(^\text{25}\), Franks, Harris and Titman\(^\text{26}\), they admit that “the lack of corroboration across papers, as well as the use of empirical methodologies now considered inadequate for measuring long-run abnormal stock performance, prevent one from drawing a strong conclusion at this point”. (p.6)

Agrawal and Jaffe\(^\text{27}\) mention also the performance following failed bids, however the results of their review show two significant abnormal returns and one statistically insignificant according to Limmack\(^\text{28}\) study. “However, the results raise more questions than they answer.”

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24 Ibid
One other interesting fact they highlight, is from Fama\(^{29}\) (p.304) considering the part of chance in the long-run performance literature: “Consistent with the market efficiency hypothesis that the anomalies are chance results, apparent overreaction of stock prices to information is about as common as under reaction. And post-event continuation of pre-event abnormal returns is about as frequent as post event reversal.”\(^{30}\) (p.50)

**Critical analysis**

Agrawal and Jaffe\(^{31}\) review the literature about the performance of takeovers. They describe each method from each author and they summarize and criticize it. The internal validity seems to be well managed as they redo each method, compare them and synthesize. However we can maybe argue the fact that not all authors who deal with this subject have been taken into account. So there was a choice from Agrawal and Jaffe\(^{32}\), a subjective one to decide which study is more relevant or not compared to another.

Furthermore, the studies that the authors reviewed are mainly over 3-5 years following the merger. Is it enough years to determine the performance of takeovers? Does the kind of firm’s activity should be taken into account? Anyway the external validity is not verified due to database which is principally based on the US and UK.

1.3. **Frequency of negative abnormal returns**

*Based on Andrade, Mitchell, and Stafford\(^ {33}\) researches.*

**Report**

In their study, Andrade, Mitchell, and Stafford\(^ {34}\) update the sample of the takeover study for the 1990s and thus bring new results regarding their former analysis (p.103). For instance, they reviewed the stock market reaction to merger announcements in order to determine if mergers create or not value for shareholders. As a result for combined firm (target + acquirer), positive abnormal returns are observed during 1973 to 1998 on 3,688 mergers: both for the short and long window of event study ([-1 day; +1 day] and [-20 days; Close\(^ {35}\)]), 1.8% and 1.9%, respectively (p.110). However the researchers established for the acquirer, a negative abnormal return of - 0.7% for the short window and -3.8% for the long one on the same period and population. They conclude “it is difficult to claim that acquiring firm shareholders are losers in merger transactions, but they clearly are not big winners like the target firm shareholders” (p.111).

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\(^{31}\) Ibid

\(^{32}\) Ibid


\(^{34}\) Ibid

\(^{35}\) Close refers to the merger closing date.
In order to be consistent in their analysis they look for the same validation on a long-term. They review the conclusions of their predecessors who for most of them determined a negative long-term abnormal return for acquirers. But these results present big differences mainly based on the way of financing the transaction. Indeed, “-24.2% over the five-year period after the merger for acquiring firms using stock financing whereas the abnormal return is +18.5% for cash mergers” (p.112). They also add the fact that firms with high book to market equity ratio tend to have higher returns on average (p.113).

Furthermore in order to measure the performance of post-takeover, the team compares pre-and post merger accounting measures such as operating margins, or return on assets. “If mergers truly create value for shareholders, the gains should eventually show up in the firms’ cash flows” (p.114).36

They quote Ravenscraft and Scherer37 and Healy, Palepu and Ruback38 who studied this profitability, but reach different conclusions about the benefits from mergers. For instance Ravenscraft and Scherer39 found a loss in profitability following the merger; and Healy, Palepu and Ruback40 show that post-merger operating performances are improved relative to an industry benchmark (p.115).41

**Critical analysis**

The comparison made by Andrade, Mitchell, and Stafford42 is quite consistent. They seem to integrate a relevant stock data from the Center for Research in Security Prices (CRSP) to document the merger activity based on the merger activity in the US in the 90’s. They actually analyze more than 4000 mergers during 1973-1998. To complete the picture, they also take into account the size of the target firms and the type of financing of the transaction (with or without stocks). However we can be surprised how they managed to point out differences or similarities, as we do not know exactly the method they used in their study. So the constructive validity can be questionable. Concerning the external validity, the paper cannot be generalized due to the geographical limit of the data.

1.4. **An exception to the common results: the Australian Case**

*Based on Dullard and Hawtrey43 researches.*

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42 Ibid
Report

This article, from Dullard and Hawtrey, deals with a study about the post-takeover returns of Australian acquirer firms during the period 2001 to 2003 (p.65). According to the results, acquirer companies would outperform the market benchmark in the three years following the takeover. Therefore, it is concluded that takeovers improve the share price performance of such companies relative to their pre-takeover history (p.68).

The study is based on the financial performance (viewed here as the share price performance) and the operating performance (based on abnormal returns) of the acquirer. It seems to be uncorrelated with some studies comparing target and acquirer performance that we mentioned earlier as the studies they refer to in their article (p.66):

- Dodd, examining 170 bidding companies and 72 target companies between 1960 and 1970, concluded that the shareholders of target companies appeared to gain at the expense of the acquirer shareholders.

- Walter, found evidence of a wealth transfer from acquirers to targets on account of a “bid premium” and found evidence of a negative abnormal return to acquirers post-takeover.

- According to McDougal et al., having conducted research on 88 takeovers of listed Australian companies between 1970 and 1981, profit variability of acquirers increases and earnings growth is less than during the pre-takeover period. It suggests that acquiring firms did not benefit from the acquisitions.

Critical analysis

Internal validity of this study might be ensured by the sample of 45 takeovers between 1 January 2001 and 31 December 2003 on the Australian Stock Exchange (ASX), taking into account through some confounding variables like the true change of control in the post-takeover; which allows finding some results on the impact of takeovers on post-bid performance.

Combining the focused study on the 45 Australian takeovers with the different researches listed above, it looks difficult to propose an external and global validity for answering the question on the increase of performance post-takeover for acquirers. Indeed many determinants like time, geographic area, sector, size, reduce considerably the possibility to propose a unique and general answer.

The study of Australian takeovers reveals that post-takeover abnormal returns are positive for each of the three years following the takeover based on evidence that acquirer companies significantly outperform the external market benchmark and outperform other firms in their industry post-takeover. But even if a positive and variable post-takeover return is revealed for acquirers, it seems to be in general inferior to the return of target firms.

1.5. The size: determinant for takeover performance

Based on Chatterjee’s researches.

Report

According to Chatterjee, during the 1970s, takeover activity was limited to small or medium companies, especially the ones that were very unprofitable. At that time, very large companies were said to be immune from takeover because of their size, which was described by Singh as “the most powerful discriminator” (p.185). However, in the 80s, a few new instruments like junk bonds and mezzanine debt appeared and allowed to overcome financial obstacles (p.185). As very large companies were kind of protected from takeover until that time, some argue that they could not be as profitable as the ones, smaller, that have to face takeovers (for instance because of their dominant position on their market or because of their dispersed ownership that reduces the pressure on managers), so that large gains may arise from takeover on a very large target (p.185-186).

Critical analysis

Chatterjee, in his paper, measures the performance by studying the acquirers of the biggest UK takeover targets in the 1980s to be compared with the full population of targets, especially looking at their share price and accounting profit performance, which seems to be relevant for the internal validity of the paper. However, we may argue that the share price does not always reflect the fundamental value and performance of companies, which may raise doubts about the construct validity.

Regarding the results, some figures suggest that the accounting profit of the acquirer is better in the year of the merger, but then the profitability that is recorded is worse for the two years that follow. However, neither the profitability model nor the ones of the share price generate statistically significant results. Finally the prediction that the yield for acquirers of very large takeover targets would be higher is not confirmed; there is actually no improvement in their performance to be compared with the full population of takeovers. The external validity of this paper is definitely limited as the research was performed on UK takeovers that occurred

51 Ibid
54 Ibid
during the 1980s. Studying current takeovers on very large companies may lead to highly different results.

1.6. Higher performance through a strategic takeover

Based on Palepu and Ruback\textsuperscript{55} researches.

Report

Healy, Palepu and Ruback\textsuperscript{56} define and investigate two distinct types of takeovers:

1. “Friendly transactions that typically involved stock payment for firms in overlapping businesses”, that are referred to as “strategic” takeovers (p.45).

2. “Hostile transactions that generally involved cash payments for firms in unrelated businesses, which are called “financial” takeovers (p.45).

They examine the cash flow performance after the merger in the fifty largest U.S. takeovers that took place between 1979 and mid-1984.

A first sample is studied with the assumption that no premium was paid; in this case, they show that takeovers improve performance (p.48). However, the second sample, which includes the actual premiums paid, highlights that “the improved performance was insufficient for the acquirer to earn returns beyond those required to justify the premium” (p.48). Then they show that transactions that are considered to be friendly are more profitable than hostile transactions (p.51-52). There are a few reasons for that.

First of all, it seems that the premium paid is lower for friendly transactions: the median target premium for financial takeovers is 50%, versus only 29% for strategic takeovers (p.52). The fact that the transactions are generally stock-financed for the strategic takeovers can decrease any risk that relates to the valuation of the target company as the shareholders of the latter may suffer in the future from a valuation mistake (p.45).

Then, the authors report that a high level of overlap between the acquirer and the targeted company might have a lot of advantages: it may create high synergies, the managers of the acquirer have much more expertise in managing and monitoring a company in a business which is similar to their own (p.51). As it is a “friendly” transaction, managers may get access to proprietary information during the negotiations (p.45). Eventually, the authors state that “strategic acquirers seem to pay less to earn more” (p.52).\textsuperscript{57}

\textsuperscript{56} Ibid
\textsuperscript{57} Ibid
Critical analysis

The results of this paper are quite logical, synergies and lower premiums are the key elements here in favour of the strategic takeovers. It is obvious that it is very difficult for financial takeovers to do more than break-even when the premium reaches 50% of the value. The internal validity seems to be reliable with regards to the instruments used (accounting performance measure). Regarding the external validity, it would be ambitious to generalize the results as for instance the sample includes only fourteen strategic and twelve financial takeovers.

1.7. Geographical place: a determinant in the performance

Based on Aw and Chatterjee\(^\text{58}\) researches.

Report

Aw and Chatterjee\(^\text{59}\) take into account the post-takeover performance of UK acquirers of domestic UK, US and Continental European targets between 1991 and 1996. They especially focus on the cumulative abnormal returns that may occur during the two years that follow the takeover. They filtered the sample they used by limiting to takeovers with an acquired part above 50%, and a threshold of US$400m. They computed results with two different models, one of them is the Market Adjusted Returns Model (MAR) and the other one is the Market Model (MM), with sample size of respectively 79 and 77 acquisitions.\(^\text{60}\)

First of all, the authors found out that when UK acquirers take over a company (whatever its geographical location), the average cumulative abnormal returns (CAR) are generally negative in a period up to two years after the takeover. Then they tried to figure out whether the geographical location of the acquired company has an impact on the performance. According to the results, when UK bidders acquire UK companies, they report positive CARs in the first six months after the announcement of the takeover, but for the periods above 6 months, the CARs reported are negative. However, they claim that results are not significant. The same results for UK bidders acquiring US and Continental Europe targets show significant figures: it seems that the CARs are clearly negative during the post-bid period, and the results are even worse for Continental European targets. Finally they showed that CARs are significantly negative, and they become more and more negative the longer the test period is after the takeover. However, the paper clearly highlights that the performance of UK bidders acquiring UK companies is better (even if still negative in general) than the performance of UK bidders acquiring US and Continental Europe targets. A few reasons may explain this. The cross-border differences might be the main argument: the differences in culture, language, politics and accounting are probably a serious obstacle.

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\(^{59}\) Ibid

\(^{60}\) Ibid
Furthermore, the foreign acquirer may suffer from a lack of information regarding target’s market and valuation parameters, which might cause the foreign acquirer to pay high premium, maybe higher than the one that domestic companies are willing to pay.

**Critical analysis**

The use of two models (MM and MAR), the study on four periods (t+6 months, t+12, t+18 and t+24) and the fact of setting up some significance levels (1%, 5%, 10% and 20%) ensure the construct validity and the statistical conclusion validity of the paper. Furthermore, these results are consistent with the previous ones of Chatterjee\(^{61}\), who studied in 2000 the CARs of the acquirers in the largest takeovers involving UK companies. However the period of observation may be considered as a bit short (24 months) with regards to the findings of Higson and Elliott\(^{62}\) who observed that post-bid performance is sensitive to the observation period.

**1.8. Conclusion to the general theory on takeovers**

Jensen and Ruback\(^{63}\) suggest that in general takeovers create value but some disparities must be taken into account like the successful or not aspect of the bid and the type of acquisitions which was implemented (tender offers, mergers, and so on).

As Jensen and Ruback\(^{64}\), Agrawal and Jaffe\(^{65}\) describe post merger performance as a puzzle in which it seems difficult to draw a strong conclusion as long run abnormal stock performance may only be roughly computed whatever the empirical methodologies which were used.

In addition to this, we could through the analysis of Agrawal and Jaffe\(^{66}\), deal with a random theory considering the stock prices reactions after a takeover: overreaction as under reaction of stock prices may be linked to the market efficiency hypothesis defending that such anomalies are chance results. It might be an explanation to the inconclusive results of different studies about abnormal post-takeover returns.

The updated study of Andrade, Mitchell, and Stafford\(^{67}\) confirms the lack of consistency to state clearly on the post-takeover performance: even if some negative abnormal returns on different post-takeover periods are computed, these researchers argue that it is difficult to state that acquiring firm shareholders are losers in merger transactions. On another side they clearly are not big winners like the target firm shareholders (p. 111).


\(^{64}\) Ibid


\(^{66}\) Ibid

One more point to take in account, according to Andrade, Mitchell, and Stafford\textsuperscript{68}, is the type of financing the transaction (with or without stocks). This criterion might modify the level of post performance. According to their study, negative abnormal returns by stocks and positive abnormal returns by cash are observed.

About the size of the companies, Chatterjee\textsuperscript{69} specified in his study the translation from a more small-companies activity in the 1970’s to a more large-companies merging process in the 1980’s and so on. This change is argued with the apparition in the 80’s of tools like junk bonds and mezzanine debt to finance large acquisitions. It is said that larger gains should arise with larger size companies.

Chatterjee\textsuperscript{70}, in another study with Aw, underlines the real influence of the geographical place (cross border or domestic takeovers) on the performance of the takeover: domestic takeovers appear to be more successful taking in consideration the better management of a common culture, language, politics and accounting; which is probably a serious obstacle in the case of cross-border takeovers, where many differences might be observed.

Focusing on the Australian market, Dullard and Hawtrey\textsuperscript{71} present an original conclusion compared to most of the studies: Australian acquiring companies would outperform the market benchmark in the three years following the takeover. As supported by Aw and Chatterjee\textsuperscript{72}, some determinants like geographical area might be taken in account to explain such results.

In their study, Healy, Palepu and Ruback\textsuperscript{73} deal with friendly and hostile transactions. They conclude on the highest percentage of a better post-takeover performance in the case of a friendly transaction where managers may get access to more information during the negotiations as synergies and lower premium are observed too.

We can observe through this first part on general takeovers that many criteria and aspects must be taken into account to state on the post-takeover performance as a general conclusion and assertions are not achievable considering the diversity of the studies as the contradiction of the results.

2. **Analysis of articles about takeovers in banking industry**

The first part of our literature review dealt with takeover on a general aspect. We decided to only focus this second part on the theoretical study of acquisitions in the banking industry.


\textsuperscript{73} Healy, P.M., Palepu, K.G. and Ruback, R.S., (1997), Which takeovers are profitable? Strategic or financial?, *Sloan Management Review*, Summer 1997, p.45-57.
2.1. Takeover: an incentive to maximize firm value

Based on Schranz's researches.

Report

According to Schranz, evidence indicates that firms in states with an active takeover market are more profitable (p. 300). A core point delivered here is that takeovers provide managers with the incentive to maximize firm value (p. 299). The article identifies some alternative methods like concentration of equity ownership and management ownership of stock, when takeover activity is restricted, but it is said that such alternative methods have a smaller effect on profitability (p. 323).

With an active takeover market, it might be more the threat of a takeover than post-takeover, which may provide management with the incentive to maximize firm value (p. 300). In this case, the target management refuses the takeover bid because it does not want to be controlled by another company or maybe be replaced.

With a restricted takeover market, an alternative method like concentration of equity ownership could be used in a takeover process too. A large and concentrated block of stock has the potential for serving as a check on management and represents an implicit threat to management according to Demsetz and Lehn. Thus it might be a useful tool to provide incentives to management to maximize firm value once the takeover is achieved (p. 301).

Finally, the threat of a takeover may have disputed effects on performance. On one hand, it might provide incentives to maximize firm value. On the other hand, it might provide incentives for poison pills, greenmail, and other anti-takeovers actions, which could decrease firm profitability. (p. 301)

Critical analysis

Considering internal validity of Schranz’s article, the research was realized on a two years-basis (in 1979 and 1987) on a sample of 200 publicly traded banks trading on organized exchanges and over the counter; 112 banks were selected for 1979 and 88 banks for the year 1987. The large sample of studied banks here, added to the fact that the issue of a conflict of interest between managers and shareholders is not limited to the banks and may be applied to other corporate organizations, may confer an external validity to this analysis.

75 Ibid
76 Ibid
77 Ibid
80 Ibid
81 Ibid
Based on this article, we could suggest that an active takeover market in banking industry could be more profitable than the concrete achievement of the takeover. According to the model determining firm profitability in this article, the threat of takeover seems to be a strong factor combined with some other determinants and specifically the concentration of equity ownership to maximize firm value.

This article is merely based on the target firm performance and does not take into account the evolution of performance by the firm bidder.

2.2. A tendency for US banking acquisitions growth

Based on Hannan and Rhoades\textsuperscript{82} researches.

Report

In their article, Hannan and Rhoades\textsuperscript{83} deal with the importance and the large growth of mergers and acquisitions in the banking industry in the state of Texas in the United States particularly at the beginning of the 1980’s: as it indicates, we could observe 188 bank mergers in 1980 involving US dollars 9.8 billion in acquired assets and by 1983 there were 432 mergers with US dollars 43 billion in acquired assets (p.1).

This tendency was effectively confirmed in the following years. Different reasons and motivations might influence this tendency. Diversification and economies of scale are mainly quoted here.

The analysis here uses a sample of 1,046 Texas banks that existed in 1970, out of which 201 were acquired during the period 1970-1982 (p.3). This large sample is used to estimate the relationship between the likelihood of acquisition and the characteristics of the target firm and its market.

Some results suggest that firms with large market shares, low capital/asset ratios (as high capital/asset ratios might require high payments) and operations in urban areas are relatively likely to be acquired but not obviously firms with low profits or low growth. (p.8)\textsuperscript{84}

Critical analysis

Internal validity may be insured by the subsequent size of the sample added to the relative small size of the study area, which is the Texas.

External validity is relatively easy to check as this study is focused on only one sector, the banking one, which is very special and works in a specific way. This tendency had been observed on a global scale and might be confirmed since the 80’s on the European market too.

\textsuperscript{83} Ibid
\textsuperscript{84} Ibid
2.3. **Bank deregulation all over the world**

*Based on Hagendorff, Collins and Keasey*\(^85\) *researches.*

**Report**

In their study, Hagendorff, Collins and Keasey\(^86\), deal with the direct effect of bank deregulation which is operated all over the world since the beginning of the eighties. This effect is a substantially growth of mergers and acquisitions in banking sector. (p.1) These two main topics (bank deregulation and acquisition activity) are illustrated in this article through the example of the USA, Italy and Germany.

USA may be defined as a very good illustration of regulatory changes and an unprecedented surge in mergers and acquisitions. Germany and Italy present different levels of regulation but relatively common levels of merging activities (p.1). In Germany, the near future seems to be focused on acquisitions of savings banks by Landesbanken (Banks of each Land) as well as mergers between private and the public sector banks (p.8).

It is observed that mergers and acquisitions in the banking industry let institutions exploit cost-based synergies like economies of scale and scope, leading to lower transactions costs, higher market liquidity and, ultimately, better risk diversification. It is observed in this article too that to reap the benefits associated with a more integrated banking system, further deregulation is necessary in Italy and, most importantly, in Germany. (p.9)\(^87\)

**Critical analysis**

This article presents a mix of qualitative analysis and historical data, which may infer a reasonable internal validity to the different affirmations which are discussed.

External validity even for all Europe based on Germany and Italy examples might be difficult to be suited, indeed we can observe many differences even between the several business banks and different regulation depending on the country.

2.4. **Banking merger as a consolidation program**

*Based on Tan and Hooy*\(^88\) *researches.*

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\(^86\) Ibid

\(^87\) Ibid

Tan and Hooy\textsuperscript{89} studied the Malaysian bank merger program and its effects on the volatility of the Malaysian bank stock returns. It seems that this consolidation program brought about stability for the banks’ stock prices and returns. It represented a major structural enhancement to the banking system of the country. (p.1)

This program was a direct consequence and an answer to the Asian financial crisis, which begins in mid-1997. Indeed this crisis had elevated uncertainties in the financial market and increased the instability of the bank stock returns.

On 31 December 2000, 54 domestic financial institutions were consolidated into 10 banking groups while 13 foreign-owned banks were left untouched. Effectively, about 70 percent of the total assets of the entire banking sector had been rationalized and consolidated. We can realize here the importance and the impact of this program. (p.3)

Even if our research is not dealing with Asian markets, it is still interesting to study this kind of situation linking instability caused by financial crisis and role of banking mergers.\textsuperscript{90}

**Critical Analysis**

Internal validity of this study may be confirmed by the quality and the accuracy of models like ARCH\textsuperscript{91}, GARCH\textsuperscript{92} and EGARCH\textsuperscript{93} models which were implemented here.

It is obvious that external validity may be difficult to be checked outside Malaysia since this article is only based on the Malaysian market. But even inside the country, it looks difficult to generalize on a topic which offers so many differences between financial institutions.

On another side, the Asian financial crisis had some general impacts on most of the Asian countries. Therefore we could accept a larger and general effect of such a program if it was effectively implemented in the other countries too.

2.5. **Defensive acquisitions and takeover premium**

*Based on Baradwaj, Dubofsky and Fraser\textsuperscript{94} researches.*

\textsuperscript{89} Tan, H.B. and Hooy, C.W., (2003), Bank merger and bank stock volatility: A post -Announcement analysis, University Putra Malaysia, Vol.30, No.4, p.29-47.

\textsuperscript{90} Ibid

\textsuperscript{91} ARCH: Autoregressive Conditional Heteroskedasticity model. It was developed by Engle in 1982.


\textsuperscript{92} GARCH: Generalized Autoregressive Conditional Heteroskedasticity model. It is an extension to the ARCH model and was developed by Bollerslev in 1986.


\textsuperscript{93} EGARCH: Exponential Generalized Autoregressive Conditional Heteroskedasticity model. Taking in consideration exponential volatility in downward and upward movements in the equity market, it was proposed by Nelson in 1991.


Report

In their article, Baradwaj, Dubofsky and Fraser\textsuperscript{95} deal with defensive acquisitions in the banking industry in the United States. Defensive acquisitions are defined here as takeovers made by a firm so as to become so large that it becomes an unattractive target itself. On the other side, this firm, applying defensive acquisitions, loses a takeover premium which is based on the attractiveness of a target company. As it is not attractive anymore in term of return on investment on a short term basis, the takeover premium is more and more reduced for this firm but increases for smaller competitors which became more likely targets. This “takeover premium” hypothesis argues that a firm’s value changes when its probability of being a future takeover target changes. (p.1)\textsuperscript{96}

Thus this article analyzes a sample of American defensive acquisitions in the United States. Based on the study of abnormal returns, defensive acquirers appeared to suffer a substantial reduction in net wealth for the privilege of growing too large. It seems too that, in the contrary, smaller competitors, not involved in the merger, but in the same market area, should experience significantly positive abnormal returns upon the announcements as a consequence of this defensive acquisition. In contrast, and consistent with the takeover premium hypothesis, larger in-state competitors do not react to the defensive acquisition announcement. (p.7)\textsuperscript{97}

Critical analysis

This study, which was realized on a sample of 19 mergers in the United States in the period from 1982 to 1993, is really focused on the defensive acquisitions in bank industry. It may induce a good level of internal validity considering the quantitative analysis that was realized and data collected from sources like Wall Street Journal or Moody’s Bank.

External validity may be confusing: even if the banking industry provides a relatively self-contained segment of the U.S. economy for testing the takeover premium hypothesis, it may be difficult to generalize these results to the different industries. Extending this research to other industries would allow to provide evidence on the robustness of these results or to reduce this robustness.

2.6. Human resources: a determinant in acquisitions effectiveness

Based on Lin, Hung and Li\textsuperscript{98} researches.

Report

In their paper, Lin, Hung and Li\textsuperscript{99} investigate how a firm’s human resource capability can affect the deployment and effectiveness of corporate mergers and acquisitions strategy. It is


\textsuperscript{96} Ibid

\textsuperscript{97} Ibid


\textsuperscript{99} Ibid
based on the study of 267 US banking firms, which confirms the better effectiveness of such mergers as the increase of the performance when the firm has high Human Resources capability. (p.1)

As it is stipulated in the paper, the main message of this research is that human resource capability is critical for M&A strategy to be effective. A point to underline is that a wide body of evidence has suggested that the management of human-related factors in the post-acquisition implementation is very important, and half of the acquisitions failed because they were badly managed. Cartwright and Cooper\(^\text{101}\) point out the fact that about 50 percent of M&As do not achieve the anticipated outcomes and Human Resources management can play a role in reducing the distress and loss of productivity during the M&A processes.

**Critical analysis**

Internal validity may be proved by the relative high size of the sample (267 US banking firms) regarding the studied industry. This study utilizes secondary banking M&A data from publicly available data sources.

External validity might be discussed. On one hand it may be demonstrated taking in consideration the real importance of the human resources in the management of any businesses. On the other hand, it is still ambiguous to generalize these findings to smaller financial firms and firms in other industries for instance.

### 2.7. Value-added through cross-border acquisitions

*Based on Lindblom and Von Koch\(^\text{102}\) researches.*

**Report**

Lindblom and Von Koch\(^\text{103}\)’s goal in their paper is to study the gains and motives that may result from cross-border bank mergers. They argue that more and more cross-border mergers in the banking industry may happen in Europe because of the implementation of the European Monetary Union (EMU) (p.45). As a consequence, they decided to study the merger that occurred in 1997 between the Swedish Nordbanken and the Finnish Merita banks, by using both interviews of the bank managers and the “balanced scorecard approach”, the main specificity of which is to implement two types of variables: financial and strategic ones. The balanced scorecard approach combines four different aspects that are bound together: financial perspective, the customer perspective, the internal business process perspective and the learning and growth perspective (p.47-49).\(^\text{104}\)

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\(^{103}\) Ibid

\(^{104}\) Ibid
Finally they argue that Nordbanken and Merita had a few similarities. First of all, they were both large banks with big networks on their markets; secondly, the top-managers of the two banks thought that they had to grow in order to survive to the banking industry consolidation that was taking place at that time (p.70). However they highlight that the main rationale for the successful merger is the fact that the two pre-merger banks were complementary so that managers of the post-merger bank have got the opportunity to use the strengths of one in each other (p.69). Finally they conclude that it may be more profitable to find a complementary bank, meaning that cross-selling of products and services is feasible (“offensive merger”), rather than looking for a bank with which a high level of cost reduction is reachable (“defensive merger”) (p.70).

Critical analysis

In spite of the relative complexity in analysing a bank merger because of the numerous factors that may affect the post-merger performance, the fact of combining both interviews of top-managers and the balanced scorecard approach seems to be perfectly relevant and show a high level of internal validity. The main strength of this paper is the method used: the balanced scorecard, that enables to study both financial and non-financial variables. However we may have some doubts regarding the external validity as the authors use a very specific approach, and furthermore, they apply this method on only one case of merger, for two banks that belong to the same culture, so that it seems difficult to generalize their final interpretations.

This paper is particularly interesting for us as it deals with the merger of two Scandinavian banks. Furthermore it introduces a specific financial analysis of performance that includes a trade-off between profitability and financial risk (Return on equity ROE, Return on invested funds ROIF, Return on financial leverage ROFL).

2.8. Conclusion to banking acquisitions theories

We could observe, by Hannan and Rhoades’s study, the consequent growth of banking acquisitions for different reasons particularly in the United States since the beginning of the eighties. Hagendorff, Collins and Keasey’s studies confirmed the increasing tendency for banking acquisitions based on the study of two European countries (Germany and Italy) and the United States. A main reason developed in this article is the bank deregulation which had been operated all over the world since the beginning of the eighties.

According to Schranz, we saw that firms in states with an active takeover market are more profitable based on the incentives for managers that such states can imply. Even if some

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alternative methods may be implemented in the case of a restricted takeover market, they are said to have a smaller effect on profitability compared to the effects of an active takeover market.

We saw an opposite view to these statements considering the research of Baradwaj, Dubofsky and Fraser on US defensive acquisitions and the takeover premium hypothesis. It looks finally difficult to state clearly on the positive or negative return of an active takeover market: studying the real causes, motivations and aspects for any acquisitions seem to be a compulsory step in order to value carefully the situation and its interests.

Through this literature review, we had the desire to take in consideration the human aspect which seems to be very significant in the efficiency of the acquisition according to Lin, Hung and Li’s researches as Cartwright and Cooper’s studies.

Based on Tan and Hooy’s study of the Malaysian bank merger program after the Asian financial crisis in 1997, we could observe the significant role of such acquisitions in order to consolidate banks’ stock prices and returns. The choice of this article was for us an opportunity to get more information and awareness on the Asian perception of the banking acquisitions theme.

Lindblom and Von Koch’s article enabled us to get a satisfying mind on the feasibility and the opportunity of a cross border bank merger through the example of the merger in 1997 between the Swedish Nordbanken and the Finnish Merita banks.

3. Discussion about the literature review

We could read through our different articles that mergers and acquisitions in the banking industry have increased substantially since 1980, just as they have in most of the sectors.

Based on the criterion of post-takeover performance, we could observe that, as articles dealing with takeovers in general as articles based on banking industry, considerable empirical research finds that targets in acquisitions gain but that bidders do not on a short term period. In fact, after reviewing 17 published studies of target and bidder abnormal returns in bank mergers, Palia concluded that target banks have positive excess returns (which vary from five to twenty-five percent) while bidding banks seldom earn positive and often earn negative abnormal returns (11 of the 17 studies report negative bidder abnormal returns).

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From the different articles we could read or present in this study, we could retain some reasons for banking acquisitions growth that might be aligned in parallel with the performance determinant.

### 3.1. Some reasons for banking acquisitions growth

Indeed, we could observe that mergers and acquisitions in this sector have increased constantly since thirty years for different reasons.

- **Deregulation:** One large reason was bank deregulation. Indeed bank regulators promoted more consolidated bank sectors through mergers and acquisitions. We could see that even in Europe, large differences might be still observable between the different countries in term of regulation. On the other side, we may have observed a growing harmonization of the banking sector supported by European Union. We could see recently for instance the instauration of the European directive MiFID (the market in financial instrument directive) regulating all the European listed companies.

- **A response to a financial crisis:** We studied in our literature review too that bank mergers and acquisitions could be an answer to instability due for instance to a financial crisis like the Asian one in 1997 or the subprime crisis started in the United States in 2007.

- **Defensive acquisitions:** They may be crucial too for the domestic banking industry in facing the challenges ahead, in enlarging and strengthening individual banking units in a country. We could talk here about defensive acquisitions, which occur when banks acquire other banks so that they might become so large that a future acquisition of the merged bank would be difficult or impossible.

- **Banking Empire:** Firms can also pursue non-synergistic acquisitions to grow dramatically and maintain sustained returns at the same time. It might be viewed by certain economists like the desire for building a banking empire.

- **Some business benefits:** Furthermore our literature review asserted that it existed different benefits associated with a more integrated banking sector like economies of scale, lower transactions costs, higher market liquidity, or better risk diversification.

### 3.2. Literature review as a confirmation to our purposes

As explained in Chapter 1, based on the large development of such mergers and acquisitions, and supported by these different reasons listed before, we got a natural interest for this topic and consequently had the desire to study and to compare different banking acquisitions. The different articles and reviews that we could observe and analyze, confirmed our desire to study deeper and further this topic, taking in consideration the different works, which have already been realised.
Regarding several articles, United States is the first place for banking mergers and acquisitions. It looked interesting to study this area and to compare it with an important financial area like Europe which is a large financial and business area too. It is interesting to underline here that the banking industry in the USA is one of the industries that uses mergers and acquisitions extensively as a primary business strategy. We can see below a table reporting the structure of the USA banking system in 2003 from the Organisation for Economic Cooperation and Development (OECD). This table shows that even if a large number of US banking mergers had been achieved, the USA continues to have an unusually high number of credit institutions, which may confirm the continuous trend for acquisitions.

<table>
<thead>
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<th>Categories</th>
<th>Number of institutions</th>
<th>Number of branches</th>
<th>Number of accounts (thousands)</th>
<th>Value of accounts (USD billion)</th>
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</thead>
<tbody>
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<td>68,070</td>
<td>N.A.</td>
<td>726.9</td>
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<td>10,050</td>
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<td>134.5</td>
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<td>N.A.</td>
<td>N.A.</td>
</tr>
<tr>
<td>Total</td>
<td>18,765</td>
<td>78,120</td>
<td>N.A.</td>
<td>861.4</td>
</tr>
<tr>
<td>Branches of foreign banks</td>
<td>281</td>
<td>N.A.</td>
<td>N.A.</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Note: *Includes savings banks, savings and loan associations, cooperative and industrial banks, and credit unions

**Table 1: U.S. banking structure**

*Source: US banking structure, (2003 OECD), Bank for International Settlements, FDIC, OTS.*

Internal concentration in the US: At present, it is a peculiarity of the USA system that almost all of its largest banks have virtually no operations abroad. Around half of all foreign assets by the USA banks are owned by Citibank meaning that banks like Wachovia or JP Morgan Chase only have negligible presences abroad. We can perceive here a real internal concentration of the banking industry. Considering the huge market that the United States represents, it is not so surprising for now to concentrate banks between the different states of America on a first step.

As United States is a high valuable area to study bank acquisitions, Europe presents a large panel of acquisitions too. Based on these criteria and following our empirical review, we fully decided to focus our study on these two geographical areas.

**3.3. Settlement of hypotheses:**

Based on our personal knowledge of the topic and the information surplus that our literature review brings to this paper, we want to state here some hypotheses that we will try to check according to the results of our study.
Hypothesis 1: Performance is not improved after takeover in the banking industry.

Considering the comparison that we will achieve between our two studied geographical areas and taking into account the different observations of previous studies and analyses, we will settle a second hypothesis.

Hypothesis 2: The level of post takeover performance is the same in the U.S. as in the European bank acquisitions.

3.4. Validity and reliability assessment

Based on Bryman and Cramer115 and Shadish, Cook and Campbell116 books, this section enables us to assess the internal and external validity and the reliability of the different sources we used to realise the literature review chapter.

Internal validity refers to the approximate validity of the argumentation and the quality of the theoretical reasoning, and external validity is defined as the validity of inferences about whether the causal relationship holds over variations in persons, settings, treatment variables and measurement variables. They were not always highly confirmed but we can accept a sufficient level of both validities for the different sources we used in this literature review.

The reliability might be centred on three criteria: sources, age and the scientific approach.

Most part of this literature review has been achieved on the basis of primary sources through the different articles and studies that we presented here. Analyzing these articles made us work with secondary sources too as they refer to different prior studies and theories. A criteria of this literature review was to be as reliable as possible: therefore, checking these secondary sources through a reading and comprehension of them was realised as much as possible.

Concerning the age of the articles, we tried to mix different periods of studies since the real growth of such banking acquisitions in the eighties. However, we preferred to focus our studies on consistent time period through relatively recent articles (more than 75 percent of the supported articles had been realised after the year 2000), which were anyway supported by oldest second sources. This relative young age for most of these articles, to which we combined some older sources for the basic statements, enables to support a certain level of reliability to our study.

Most of these articles had been extracted from reliable scientific journals like the Journal of Economics and Finance, the Journal of Financial Economics, the Journal of Economic Perspectives and so on; which might confer a reliable scientific approach to our study too.

Regarding these different criteria, we can confer a relatively high reliability to our literature review, which might be a relevant support for the consistency of our study.

Chapter 3
METHODOLOGY
This chapter will give us the opportunity to present our research design from the type of research we implemented to the description of the computation models we used in our study, the processed methods and criteria we applied to define a sample, and the way we collect data. As a consequence it will enable us to limit and to define our methodology and to give all the supports we needed to implement a satisfying quantitative analysis.

1. **Type of research**

1.1. **Modern positivism as a perspective for this study**

All along this study and for the most objective as possible way of working on this project, we decided to implement a modern positivistic\(^{117}\) perspective. Indeed we applied a logic of knowledge based on affirmation of theories, through a dense literature review, supported by strict scientific methods. We could argue that the findings resulting of theoretical and financial models, that we applied here, would have been the same whoever had driven these analyses: it may be viewed as a trait of objectivism. It might be based on the belief that science rests on specific results that are dissociated from the personality and social position of the investigator.

Furthermore, we could say that mergers and acquisitions procedures might be defined as concrete events and post-takeovers performance might be defined as a measurable process that we could link in one study.

We consider our study as useful for us like for the business society in the sense that it may be defined as a precise, safe and organised approach with value added, and that, not depending only on the results of the study, which might be useful for the society, but on the implementation of such a procedure for us too.

Modern positivism presents a concern with axiomatization\(^{118}\) that we tried to implement all over this study: the different statements had to be supported by a logical structure and coherence.

By this modern positivistic approach, we wanted to deal with the belief that science sometimes incorporates new ideas that are discontinuous from old ones. It might be one of the goal of this study: searching for new empirical results considering the common ones.

1.2. **Deduction as a scientific approach for this study**

Our work has been based on a review of theory on takeovers, banking sector and performance in banking acquisitions. A second step has been to collect data, depending on criteria we decided, in order to conduct our analyses. Based on some hypotheses inspired by our literature review and by a personal approach of the study, we could implement a consequent analysis of our sample. Empirical findings will allow us to statute on these hypotheses by confirming, rejecting or relativizing our hypotheses.


We developed in conclusion here a deductive approach according to Trochim\textsuperscript{119} (informally called a top-down approach), from the more general to the more specific, which seemed to be the most appropriate process to achieve our purposes.

![Diagram of the deductive process applied to our study]

**Figure 2: The deductive process applied to our study**

1.3. **Quantitative method as an empirical analysis for this study**

Our research was mainly built on a quantitative design, which is clearly implied in a deductive process. We implemented such an approach here, from theory, through observations and findings, to conclusive results.

According to Investopedia dictionary\textsuperscript{120}, quantitative analysis can be done for a number of reasons such as measurement, performance evaluation or valuation of a financial instrument.


It can also be used to predict real world events such as changes in a share price. To get a mind on the topic and to be able to offer any conclusive results, an approach, where different examples could be studied, was necessary. A quantitative analysis seemed to be the most adapted method to gather enough samples, to combine them together and then to evaluate performance.

In our mind, dealing with performance, in the post-takeover step, could not be done in another way than collecting and examining financial figures to get a concrete and real view of the situation. So many practical points could not have been achieved in a successful way with a qualitative analysis, which would have brought too much subjectivism, through any interviews for instance, and brought intensive approximation which would have been inappropriate to deal with the performance topic here. We thought that this kind of performance, based on returns and effective activities of the business, might be more observable and understandable through figures and calculations. Furthermore mergers and acquisitions are, on a core point, based more on the practical point of view than on a personal and subjective point.

As quantitative analysis, the cross-sectional one was chosen as it enabled to get observations from the whole population of takeovers included into the sample all at the same length of time following the acquisition event. Then we cut the observed sample in different groups and compared them one to each other. Finally we may assume that the findings that relate to each one of these small groups are applicable for the whole population.

A critic against this quantitative analysis would be the fact that the studied duration was the same (42 months) but the actual beginning of this duration among the banks of our sample was different in the time. For instance, for every single bank, we studied the periods between 6 and 42 months following the announcement date of the takeover. However, each announcement date is different, it might be in April 1998 but also in May 2004. In spite of these different starting points in the time, as the duration studied was the same for every single bank, we considered that we were in the case of a cross-sectional analysis. We accepted this like a possible error in our study.

2. Implemented models

Our research is mainly based on the computations of Cumulative Abnormal Returns\textsuperscript{121} by using two different models: the Market Model and the Market-Adjusted Returns Model. As the expected return is a critical factor, the fact of using two different models to determine it would ensure the relevance of our results and would enable comparisons between the two models used and with the previous studies that used these models. Indeed, the Market Model was successfully used in the studies of Baradwaj, Dubofsky and Fraser\textsuperscript{122}, Dullard and Hawtrey\textsuperscript{123}, Chatterjee\textsuperscript{124} and Aw and Chatterjee\textsuperscript{125}. Regarding the second model, the Market-Adjusted Returns model, it was used by Chatterjee\textsuperscript{126} and also by Aw and Chatterjee\textsuperscript{127}.

\textsuperscript{121}The abnormal return on a security $j$ is said to be the difference between the actual return at time $t$ and the expected return of this security $j$ at the same time $t$.


2.1. **The Market Model (MM)**

The Market Model, which is derived from the Index Model, divides the return on a security into two different parts: a firm-specific component and a systematic component. Basically, the main idea is that the reaction of a security is proportional to the reaction of the market; in addition, the model also involves the firm-specific component.\(^\text{128}\)

The ordinary least squares equation is usually defined as follows to get a security return:

\[
E(R_{jt}) = \alpha_j + \beta_j R_{mt} \tag{Formula 1}
\]

Where:
- \(E(R_{jt})\) is the expected return on security \(j\) at time \(t\)
- \(\alpha_j\) and \(\beta_j\) are the coefficients estimated by a least squares regression
- \(R_{mt}\) is the return on the market index at time \(t\)

The \(\alpha\) and \(\beta\) coefficients were determined by computing on the software SPSS a linear least squares regression analysis. The latter was done by setting the log-return on each security as the dependant variable and the market index log-return as the independent variable.

2.2. **The Market-Adjusted Returns Model (MAR)**

Unlike the Market Model, the Market-Adjusted Returns Model assumes that the expected return at time \(t\) on each security is equal to the expected market index return at the same period \(t\). Actually it works like the Market Model by setting the hypothesis that \(\alpha = 0\) and \(\beta = 1\).\(^\text{129}\)

**Market Model equation:**

\[
E(R_{jt}) = \alpha_j + \beta_j R_{mt} \tag{Formula 2}
\]

**Market-Adjusted Returns Model (with \(\alpha = 0\) and \(\beta = 1\)):**

\[
E(R_{jt}) = R_{mt} \tag{Formula 3}
\]

Where:
- \(E(R_{jt})\) is the expected return on security \(j\) at time \(t\)
- \(\alpha_j\) and \(\beta_j\) are the coefficients estimated by a least squares regression
- \(R_{mt}\) is the return on the market index at time \(t\)

---


In spite of its obvious simplicity, this model is said to be as effective and accurate as other complex models in order to get abnormal returns.\(^{130}\)

### 3. The Cumulative Abnormal Returns method (CARs)

Abnormal returns were computed by aggregating for every month the abnormal returns of every company of our sample.

For every month \(t\):

\[
AR_t = 1/N \sum_{n=1}^{N} AR_{jt}
\]

(Formula 4)

Where:
- \(AR_{jt}\) is the abnormal return on security \(j\) at time \(t\)
- \(N\) is the number of securities we aggregate every month

The Cumulative Abnormal Returns were used in the studies of Baradwaj, Dubofsky and Fraser\(^{131}\), Chatterjee\(^{132}\), and Aw and Chatterjee\(^{133}\). They were specifically relevant in our case as CARs are an aggregation of all abnormal returns over numerous time periods, which enabled to capture the abnormal returns for every single time period we studied; for instance for the 12 months that follow the acquisition, then for the 24 months following the acquisition.\(^{134}\)

For every period studied, the Cumulative Abnormal Return was computed as follows:

\[
CAR_T = \sum_{t}^{T} AR_t
\]

(Formula 5)

Where:
- \(AR_t\) is the abnormal return for month \(t\) as defined in formula (4)

Furthermore, we decided to work on the logarithmic return of the simple gross return as the former is said to have better statistical properties and is more likely to have a normal distribution.\(^{135}\)


4. Sample selection

4.1. Selected criteria

One core step of the research was to select the sample of bank acquisitions that we wanted to study. Some criteria had to be taken into account:

The main criterion is that two separated banking structures have to merge under common ownership. Furthermore, our whole study is based on the performance of the acquirer.

- **The size of our sample**: we decided to get a sample including a total of 20 mergers and acquisitions in banking industry. The number 20 seems to be relevant to get significant statistical results and a good idea of the phenomenon.

- **The composition**: it was mainly driven by a geographical factor. The sample was equally cut in two parts so that it was composed of 10 U.S. banks and 10 European banks. U.S banks were chosen when a domestic acquisition took place, whereas European banks were selected when a domestic or cross-border merger occurred, they are respectively 8 and 2 in our European sample.

- **The period when the merger occurred**: it had to occur before October 2004 so that we were able to gather data for the 42 months following the public announcement date\(^ {136}\).

Apart from these listed criteria, the sample was fully based on a random selection.

<table>
<thead>
<tr>
<th>Date(^ * )</th>
<th>Acquirer</th>
<th>Country</th>
<th>Target</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>Bank of Scotland</td>
<td>UK</td>
<td>Halifax Group</td>
<td>UK</td>
</tr>
<tr>
<td>2001</td>
<td>Allianz</td>
<td>Germany</td>
<td>Dresdner Bank</td>
<td>Germany</td>
</tr>
<tr>
<td>2001</td>
<td>Dexia</td>
<td>Belgium &amp; Fr.</td>
<td>Artesia Banking Corp.</td>
<td>Belgium</td>
</tr>
<tr>
<td>2000</td>
<td>Hypovereinsbank</td>
<td>Germany</td>
<td>Bank Austria</td>
<td>Austria</td>
</tr>
<tr>
<td>2000</td>
<td>Royal Bank of Scotland (RBoS)</td>
<td>UK</td>
<td>National Westminster (Natwest)</td>
<td>UK</td>
</tr>
<tr>
<td>2000</td>
<td>Barclays</td>
<td>UK</td>
<td>Woolwich</td>
<td>UK</td>
</tr>
<tr>
<td>2000</td>
<td>HSBC</td>
<td>UK</td>
<td>Crédit Commercial de France (CCF)</td>
<td>France</td>
</tr>
<tr>
<td>1999</td>
<td>Banco Bilbao Vizcaya (BBV)</td>
<td>Spain</td>
<td>Argentaria</td>
<td>Spain</td>
</tr>
<tr>
<td>1999</td>
<td>BNP</td>
<td>France</td>
<td>Paribas</td>
<td>France</td>
</tr>
<tr>
<td>1999</td>
<td>Banco Santander</td>
<td>Spain</td>
<td>Banco Central Hispanoam. (BCH)</td>
<td>Spain</td>
</tr>
</tbody>
</table>

*Date of public announcement\(^ * \)

Table 2: Sample of M&A for European banks

Ranked by date of public announcement.

\(^ {136}\) Actually, the public announcement date of the latest one in our sample is May 2004 (merger between SunTrust and National Commerce Financial).
<table>
<thead>
<tr>
<th>Date</th>
<th>Acquirer</th>
<th>Country</th>
<th>Target</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>SunTrust</td>
<td>U.S.</td>
<td>National Commerce Financial</td>
<td>U.S.</td>
</tr>
<tr>
<td>2001</td>
<td>First Union Corporation</td>
<td>U.S.</td>
<td>Wachovia Corporation</td>
<td>U.S.</td>
</tr>
<tr>
<td>1999</td>
<td>AmSouth Bancorporation</td>
<td>U.S.</td>
<td>First American National Bank</td>
<td>U.S.</td>
</tr>
<tr>
<td>1998</td>
<td>Travelers Group</td>
<td>U.S.</td>
<td>Citicorp</td>
<td>U.S.</td>
</tr>
<tr>
<td>1998</td>
<td>Bank One Corporation</td>
<td>U.S.</td>
<td>First Chicago NBD Corporation</td>
<td>U.S.</td>
</tr>
</tbody>
</table>

*Date of public announcement

**Table 3: Sample of M&A for U.S. banks**

Ranked by date of public announcement.

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Type</th>
<th>Transaction in billions (Euros)</th>
<th>Date of announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allianz</td>
<td>Dresdner Bank</td>
<td>Acquisition</td>
<td>25</td>
<td>April 2001</td>
</tr>
<tr>
<td>Bank of Scotland</td>
<td>Halifax Group</td>
<td>Merger</td>
<td>14,5</td>
<td>July 2001</td>
</tr>
<tr>
<td>BNP</td>
<td>Paribas</td>
<td>Acquisition</td>
<td>12,12</td>
<td>August 1999</td>
</tr>
<tr>
<td>HSBC</td>
<td>Crédit Commercial de France</td>
<td>Merger</td>
<td>10,5</td>
<td>July 2000</td>
</tr>
<tr>
<td>Banco Bilbao Vizcaya</td>
<td>Argentaria</td>
<td>Merger</td>
<td>10,46</td>
<td>November 1999</td>
</tr>
<tr>
<td>Banco Santander</td>
<td>BCH</td>
<td>Merger</td>
<td>9,71</td>
<td>January 1999</td>
</tr>
<tr>
<td>Barclays</td>
<td>Woolwich</td>
<td>Merger</td>
<td>9,1</td>
<td>August 2000</td>
</tr>
<tr>
<td>Hypovereinsbank</td>
<td>Bank Austria</td>
<td>Acquisition</td>
<td>7,8</td>
<td>July 2000</td>
</tr>
<tr>
<td>Dexia</td>
<td>Artesia Banking Corp.</td>
<td>Acquisition</td>
<td>3,3</td>
<td>March 2001</td>
</tr>
</tbody>
</table>

**Table 4: Sample of M&A for European banks (detailed)**

Ranked by amount of transaction.

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Type</th>
<th>Transaction in billions (USD)</th>
<th>Date of announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travelers Group</td>
<td>Citicorp</td>
<td>Merger</td>
<td>140</td>
<td>April 1998</td>
</tr>
<tr>
<td>Bank of America Corporation</td>
<td>FleetBoston Financial Corp.</td>
<td>Acquisition</td>
<td>47</td>
<td>October 2003</td>
</tr>
<tr>
<td>Norwest Corporation</td>
<td>Wells Fargo &amp; Company</td>
<td>Acquisition</td>
<td>31,7</td>
<td>November 1998</td>
</tr>
<tr>
<td>Bank One Corporation</td>
<td>First Chicago NBD Corp.</td>
<td>Merger</td>
<td>29</td>
<td>June 1998</td>
</tr>
<tr>
<td>First Union Corporation</td>
<td>Wachovia Corporation</td>
<td>Merger</td>
<td>14,4</td>
<td>April 2001</td>
</tr>
<tr>
<td>SunTrust</td>
<td>National Commerce Financial</td>
<td>Acquisition</td>
<td>6,98</td>
<td>May 2004</td>
</tr>
<tr>
<td>AmSouth Bancorporation</td>
<td>First American National Bank</td>
<td>Acquisition</td>
<td>6,3</td>
<td>June 1999</td>
</tr>
<tr>
<td>Citigroup, Inc.</td>
<td>Golden State Bancorp, Inc.</td>
<td>Acquisition</td>
<td>5,8</td>
<td>May 2002</td>
</tr>
</tbody>
</table>

**Table 5: Sample of M&A for U.S. banks (detailed)**

Ranked by amount of transaction.
The U.S. bank currently well known under the name “Citigroup” is involved in two different M&A in our sample. On the one hand, the merger between Travelers Group and Citicorps happened in April 1998 and eventually took the name Citigroup. On the other hand, Citigroup acquired Golden State Bancorp in May 2002. As a consequence, we only got one overlap in our computations: as there are only 49 months between these two announcement dates, but we went backward 54 months (48+6) before the announcement to calculate the beta of the security, it implied that there might be an influence of the first takeover in the beta computation used for the second one (cf. figure 3: time-line).

4.2. Rejected criteria

We decided not to take into account the real nature (Commercial banks or Thrift institutions) of the different banking businesses, as we considered this factor as unessential in our study. Indeed banks became through acquisitions and diversifications more and more multidisciplinary as it was a need and a real demand. Therefore we did not see the type of bank businesses as primary and widely influencing the acquisition.

We also defined the sample without considering the size of the banks that were involved in the takeovers. Neither lower nor upper limits were applied to determine a specific range of income. However we applied a small criterion by taking into account only mergers and acquisitions for which the transaction amount was above one billion euros or dollars, so that operations that may be defined as small were excluded.

Furthermore the criterion whether the takeover was friendly or hostile was also rejected in our study as we appreciated that it was not always completely defined: sometimes it happens to be hostile first and then to become friendly; the reverse situation may also exist.

4.3. Time considerations

We had to choose a specific date so that we were able to determine accurately the pre-takeover and post-takeover periods. On the one hand, Chatterjee\textsuperscript{137} and Asquith\textsuperscript{138} decided to take the first public announcement date as a starting point. It is also said to be the outcome date, when the press releases the information that the acquisition is going to be concluded. On the other hand, Franks et al.\textsuperscript{139} decided to start their study one month after the final bid, arguing that the abnormal returns in the month following the final bid may face some discrepancies because of the reactions of the market.

Considering all this, we chose to take the public announcement date as a “date 0”. By public announcement date, we mean the date when the two companies involved into the takeover announced that an agreement had been found to complete the takeover. For us, it had more sense to do that as the actual first announcement in the case of a hostile takeover may be


followed by a few months of bargaining before an actual agreement is concluded. In the same way, the completion date seems to be quite difficult to appreciate, even if there might be an official announcement that the takeover is completed, which is not always the case. At which date is it possible to assert that the takeover is effectively completed? Is it two months or ten months after the public announcement?

The regression analysis to compute the $\alpha$ and $\beta$ coefficients was finally performed on the period from $t - 54$ to $t - 6$ (48 months), assuming that the stock return may be affected during the 6 months before the public announcement of an agreement (as defined earlier) by any announcement or event that relate to the acquisition. Furthermore, the fact of performing the linear regression on 48 months affords us to get enough data entries to ensure the statistical validity of our study.

The performance computation was performed on 36 months, assuming that it would set-up a long enough period to capture the post-takeover performance of companies, accordingly with the findings of Higson and Elliott, who observed a high sensitivity of the post-bid performance to the observation period. Furthermore, we decided to define $t + 6$ as the starting point to begin our computations about performance, as we appreciated that 6 months would be necessary before the share price fully reflects the actual performance of the new created entity. Such a long period enables to avoid both the first excitement and then the disappointment of investors that usually follow the acquisition event. Eventually, the performance computations were done on the period from $t + 6$ to $t + 42$.

![Figure 3: Time-line](image)

**Figure 3: Time-line**

Time-line used for the computation of the individual betas and then for the computations of the post-takeover performance.

5. **Market indexes selection**

In both the Market Model and the Market-Adjusted Returns Model we had to compute the expected returns for each one of our securities by using the market indexes.

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140 « $t$ » being the public announcement date.

For the computations of European banks expected returns, we decided to use the FTSEurofirst 80, which represents the new generation of European tradable indices and was created by FTSE Group and Euronext. This indice is commonly used by most of the financial actors in Europe and is composed by the 60 largest securities from the Eurozone plus 20 other securities chosen according to specific criteria. Moreover, it includes two of our sample securities, BNP Paribas and Banco Santander Central Hispano, and financial companies account for 22 companies and 27.86% of the total weight of this indice.\textsuperscript{142}

For the computations regarding the U.S. banks, we used the S&P 500, which is said to be the more representative for the U.S. equities market. This index is provided by Standard & Poor’s and includes 500 leading companies of the U.S. economy. In this case again, two banks of our sample are included in this index: Bank of America Corporation and JPMorgan Chase & Co. Financial companies represent about 16.80% of the total weight.\textsuperscript{143}

\section{Data collection method}

Monthly stock returns, as well as monthly market index, were directly extracted from Thomson Datastream Advance, which is considered as the world’s largest most respected financial statistical database.

All the securities of the acquirers that we took into account were found under Datastream according to the following criteria:

- Adjusted price (adjusted from capital changes)
- Primary quote
- Major security
- “Status” was changed from “Active” to “All” for each research in order to include the “dead” and “suspended” securities as well, which was mandatory as two securities of our sample were dead\textsuperscript{144}.

According to the definition of Datastream, acquisitions are treated as follows:

The historical data of the acquirer is maintained. Some adjustments may take place, for instance if the acquisition transaction is done with an issue of shares. In this case, the number of outstanding shares is increased but the historical per-share data is not modified.

\textsuperscript{142} FTSEurofirst tradable indices factsheet (PDF) – Available: <http://www.ftseurofirst.com/indices.aspx> (7 May 2008)
\textsuperscript{143} S&P 500 factsheet (PDF) – Available: <http://www2.standardandpoors.com/portal/site/sp/en/us/page.family/indices_ei_us/2,3,2,2,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.html> (7 May 2008)
\textsuperscript{144} AmSouth Bancorporation was delisted on the 16/11/06 after the merger with Regions Financial Corporation, and Bank One was acquired by JPMorgan Chase & Co in 2004.
<table>
<thead>
<tr>
<th>Name</th>
<th>Code</th>
<th>Currency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EUROPEAN BANKS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BNP PARIBAS</td>
<td>F:BNP(P)</td>
<td>E</td>
</tr>
<tr>
<td>ALLIANZ</td>
<td>D:ALV</td>
<td>E</td>
</tr>
<tr>
<td>ROYAL BANK OF SCTL.GP.</td>
<td>RBS(P)</td>
<td>£</td>
</tr>
<tr>
<td>DEXIA*</td>
<td>B:DEX</td>
<td>E</td>
</tr>
<tr>
<td>BAYER.HYPO-UND-VBK.</td>
<td>D:HVM</td>
<td>E</td>
</tr>
<tr>
<td>BARCLAYS</td>
<td>BARC(P)</td>
<td>£</td>
</tr>
<tr>
<td>BBVA</td>
<td>E:BBVA(P)</td>
<td>E</td>
</tr>
<tr>
<td>BANCO SANTANDER</td>
<td>E:SCH(P)</td>
<td>£</td>
</tr>
<tr>
<td>HBOS**</td>
<td>HBOS(P)</td>
<td>£</td>
</tr>
<tr>
<td>HSBC HDG. (ORD $0.50)</td>
<td>HSBA</td>
<td>£</td>
</tr>
<tr>
<td><strong>U.S. BANKS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BANK OF AMERICA</td>
<td>U:BAC(P)</td>
<td>U$</td>
</tr>
<tr>
<td>SUNTRUST BANKS</td>
<td>U:STI(P)</td>
<td>U$</td>
</tr>
<tr>
<td>CITIGROUP</td>
<td>U:C(P)</td>
<td>U$</td>
</tr>
<tr>
<td>WACHOVIA***</td>
<td>U:WB(P)</td>
<td>U$</td>
</tr>
<tr>
<td>JP MORGAN CHASE &amp; CO.****</td>
<td>U:JPM(P)</td>
<td>U$</td>
</tr>
<tr>
<td>AMSOUTH BANC. DEAD - DELIST 16/11/06</td>
<td>952203(P)</td>
<td>U$</td>
</tr>
<tr>
<td>WELLS FARGO &amp; CO****</td>
<td>U:WFC(P)</td>
<td>U$</td>
</tr>
<tr>
<td>WASHINGTON MUTUAL</td>
<td>U:WM(P)</td>
<td>U$</td>
</tr>
<tr>
<td>BANK ONE DEAD - ACQD.BY 902242</td>
<td>951043(P)</td>
<td>U$</td>
</tr>
<tr>
<td><strong>MARKET INDEXES</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FTSEUROFIRST 80 E - PRICE INDEX</td>
<td>FTEF80E</td>
<td>E</td>
</tr>
<tr>
<td>S&amp;P 500 COMPOSITE - PRICE INDEX</td>
<td>S&amp;PCOMP</td>
<td>U$</td>
</tr>
</tbody>
</table>

Table 6: List of all the securities and market indexes studied

Notes about securities data extracted from Datastream:

* Data available on Datastream only from December 1996 (2 months were missing for a linear regression on 48 months so that we did it on 46 months only).
** Data available on Datastream only from June 1997 (4 months were missing for a linear regression on 48 months so that we did it on 44 months only).
*** The security we studied is Wachovia as Wachovia Corporation was acquired by First Union Corporation, but the newly created entity finally took the name Wachovia.
**** The security we studied is JP Morgan Chase & Co. as J.P. Morgan & Company, Inc. was acquired by Chase Manhattan Corporation, but the newly created entity finally took the name JP Morgan Chase & Co.
***** The security we studied is Wells Fargo & Co as Wells Fargo & Company was acquired by Norwest Corporation, but the newly created entity finally took the name Wells Fargo & Co.

Summary of the process:

1. Selection of sample
2. Identification of selected securities on Datastream and collection of stock prices and market indexes data for the requested periods.
3. Importation of the collected data under Excel
4. Exportation of this data on SPSS to compute the coefficients for every single security by using the linear regression function
5. Computation of the expected returns on Excel (with the coefficients defined in SPSS for the Market Model)
6. Calculation of ARs and CARs under Excel
7. Analysis of results
7. Limitations of method

We can attribute some critics and weaknesses to the approach and the conduct of our methodology.

- **Accounting analysis:** Concerning the evaluation of performance, we mainly based the analysis on stock returns from the public announcement to 42 months later. According to Healy, Palepu and Ruback\(^{145}\), the analysis of post-takeover performance would be more accurate if it was based on accounting measures, which represent actual economic benefits generated by takeovers, whereas stock returns are much more based on investors’ expectations particularly around the announcement. Even if an accounting computation and analysis would have been effectively more accurate, the period of 42 months seems to be long enough to counterbalance a part of these weaknesses.

- **The length of the post-studied period:** As we already state about this criterion in the literature review and above, it seems difficult to take into account a longer post takeover period: we can deal with some positive and more negative reasons about this. A longer period would allow taking in consideration much more post and second effects of a takeover as the effect on personal management or the behaviour of the investors. On the other side, the goal of this study was to study the concrete effect of a takeover on the performance of the banking entities; taking a longer period would include some others criteria and effects too, which could be far from and/or independent on the takeover process.

- **Time lag:** adding some macro and external determinants: As the different studied acquisitions in our sample do not happen at the same time, it would have been more accurate to take into account some macro economic and external factors which could explain some differences between results. Considering a margin error or adding some macro economic data would have conferred more accuracy and have linked results with external events. For instance, we might obviously observe some disparities and abnormalities in the results for acquisitions including some major events like the 11th of September 2001. We can deal with some high disparities between a country like United States and Europe in term of regulation for instance too.

- **Size of the target:** Another point to mention here, which could have been interesting to deal with for a higher degree of accuracy, is the size of the target. Indeed, as quoted by Asquith, Bruner and Mullins\(^{146}\), the size of the target might be determinant in the variations of the abnormal returns. Thus a size classification of the targets like the acquirers would have conferred a higher validity to our methodology.

- **Expected stock return computation:** One important aspect that we have to underline here too is the way the expected stock return is determined. As perceived


by Jensen and Ruback\textsuperscript{147}, there may be statistical weaknesses about the evaluation for long-term period assuming also an equilibrium market for the computation of the market return as assuming that abnormal return might be independent across firms. It could explain some differences or disparities between some results too.

- **The way of payment:** As one of the determinants, we could deal with the way of payment too that we did not take into account in our study. Indeed, according to Andrade, Mitchell and Stafford\textsuperscript{148}, the way of payment might be influential in the post-takeover performance: negative abnormal returns are generally observed with stocks and positive abnormal returns with cash. We could observe here that this kind of information was not easy to capture on the different studied acquisitions.

- **Events before and post studied periods:** We could observe for a sufficient part of our sample that some events might happen before and after the studied period and therefore influence the returns in the studied period particularly for events before the studied period. For instance, as the case of Citigroup which was concerned by two acquisitions in the studied period, we could observe that many banks were involved in other takeovers before or after the studied period; which may have some effects on the results of our study. With regards to the increasing number of takeovers in the past few years, it was hardly possible to select only banks with only one takeover in the studied period. Considering this, we should confer a margin error to our study too.


Chapter 4
EMPIRICAL RESULTS
The chapter about empirical results present and discuss all the findings of our study. First of all, we show up the results for the $\alpha$ and $\beta$ coefficients computations under the software SPSS.

Then we present the results of our calculations for the individual Cumulative Abnormal Returns (CARs) of every bank in our sample.

Ultimately, we illustrate our findings about the CARs by grouping the banks in two different geographic areas, Europe and U.S., and comparing them, which was our main ambition in this paper.

1. $\alpha$ and $\beta$ coefficients computations under SPSS

Tables 7 and 8 present the estimates for the $\alpha$ and $\beta$ coefficients that were mandatory in order to calculate the expected returns of the securities under the Market Model. We computed them under the software SPSS by using a linear regression function.

<table>
<thead>
<tr>
<th>EUROPEAN BANKS</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>DIFF(FTSEurofirs 180 LN,1)</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Sig.</td>
</tr>
<tr>
<td>Allianz - Dresdner Bank</td>
<td>-0,001</td>
<td>0,892</td>
</tr>
<tr>
<td>Banco Bilbao Vizcaya - Argentaria</td>
<td>0,007</td>
<td>0,530</td>
</tr>
<tr>
<td>Banco Santander - BCH</td>
<td>0,010</td>
<td>0,297</td>
</tr>
<tr>
<td>Bank of Scotland - Halifax Group</td>
<td>-0,004</td>
<td>0,808</td>
</tr>
<tr>
<td>Barclays - Woolwich</td>
<td>-0,006</td>
<td>0,661</td>
</tr>
<tr>
<td>BNP - Paribas</td>
<td>-0,012</td>
<td>0,306</td>
</tr>
<tr>
<td>Dexia - Artesia Banking Corp.</td>
<td>0,006</td>
<td>0,531</td>
</tr>
<tr>
<td>HSBC - CCF</td>
<td>-0,014</td>
<td>0,300</td>
</tr>
<tr>
<td>Hypovereinsbank - Bank Austria</td>
<td>0,005</td>
<td>0,731</td>
</tr>
<tr>
<td>RBoS - National Westminster</td>
<td>-0,001</td>
<td>0,936</td>
</tr>
</tbody>
</table>

Table 7: Regression analysis results for European banks

Results of the linear regression analysis computed on SPSS to get the $\alpha$ and $\beta$ coefficients required under the Market Model.\(^{149}\)

\(^{149}\) The actual SPSS notation has been maintained in the two tables that relate to coefficients computations so that the readers used to this software can easily understand them.
<table>
<thead>
<tr>
<th>U.S. BANKS</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>DIFF(SP500_LN,1)</td>
</tr>
<tr>
<td>AmSouth Bancorp. - First American Nat. Bank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank of America Corp. - FleetBoston Fin. Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank One Corp. - First Chicago NBD Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chase Man. Corp. - J.P. Morgan &amp; Co., Inc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citigroup, Inc. - Golden State Bancorp, Inc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Union Corp. - Wachovia Corp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Norwest Corp. - Wells Fargo &amp; Company</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SunTrust - National Commerce Fin.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelers Group - Citicorp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washington Mutual, Inc. - A &amp; C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8: Regression analysis results for U.S. banks

Results of the linear regression analysis computed on SPSS to get the $\alpha$ and $\beta$ coefficients required under the Market Model.

The accurate analysis for every single bank can be done according to the following example: Allianz – Dresdner Bank. The first column B-coefficient indicates the y-intercept of the line we are looking for by using the linear regression function. The column next to it named “Sig.” defines the level of significance. In the case of Allianz – Dresdner bank, the significance 0.892 for the value -0.001 indicates that the $\alpha$ coefficient is not significantly different from zero, meaning that $\alpha$ will be equal to zero in the regression line. In the same way, the second column B-coefficient represents the slope, and again, the column “Sig.” states the significance level. In the case of Allianz – Dresdner Bank, the significance 0.000 for the value 0.966 indicates that the $\beta$ coefficient is significantly different from zero, and that this value is 0.966. Finally, the Beta coefficient informs about the correlation of the two variables, which means the level of dependence of the security return (dependent variable) against the return of the market index (independent variable). For Allianz – Dresdner Bank, the value 0.709 shows a high level of dependence; when the market goes up, the Allianz – Dresdner Bank security generally goes up as well.

In the specific case of Allianz – Dresdner Bank, the regression line may be written as follows:

\[
E(R_{ADt}) = 0 + 0.966 \times R_{mt} = 0.966.R_{mt}
\]  (Formula 6)

Where:
- $E(R_{ADt})$ is the expected return on Allianz – Dresdner Bank security at time t
- $R_{mt}$ is the return on the market index at time t

The analysis we have just performed is the same for every single bank security of our sample. For the 20 banks of our sample, the analysis of the tables 7 and 8 clearly shows up that the $\alpha$ coefficients are not significantly different from zero. Furthermore, for 19 banks of our sample, the tables 7 and 8 highlight that the $\beta$ coefficients are statistically different from zero.
The only case that is different is for the entity HBOS, which was created after the merger of Bank of Scotland and Halifax Group. For this bank, the significance value 0.589 emphasizes that the $\beta$ coefficient is not significantly different from zero in that specific case. Ultimately, the regression lines for every security under the Market Model might be written as follows:

For 19 banks of our sample (all of them but HBOS):

$$E(R_{jt}) = \beta_j R_{mt}$$  \hspace{1cm} (Formula 7)

For Bank of Scotland – Halifax Group (HBOS):

$$E(R_{jt}) = 0$$ \hspace{1cm} (Formula 8)

Where:
- \(E(R_{jt})\) is the expected return on security \(j\) at time \(t\)
- \(\beta_j\) are the coefficients estimated in the tables 7 and 8
- \(R_{mt}\) is the return on the market index at time \(t\)

Ultimately, we were able to compute the expected returns, each month for every security, by using these regression lines.

2. Results of CARs computations individually for each bank

The table 9 presents the individual Cumulative Abnormal Return for every single bank of our sample, the average CAR and the median CAR for the periods \(t +12\), \(t +18\), \(t +24\), \(t +30\), \(t +36\) and \(t +42\), \(t +12\) meaning 12 months after the public announcement date.

Furthermore it is critical to notice that, as previously stated, the CAR for the bank \(j\) at time \(t +12\) is the aggregated abnormal returns of the security \(j\) from time \(t +6\) to \(t +12\) (6 months), then the CAR for the bank \(j\) at time \(t +18\) is the aggregated abnormal returns of the security \(j\) from time \(t +6\) to \(t +18\) (12 months).

With regards to this table, we can definitely observe that the post-takeover performance of the banks in our sample can go from one extreme to another.

On the one hand, Allianz – Dresdner Bank accomplishes a high performance with a Cumulative Abnormal Return above +90% at time \(t +24\) and above +80% at time \(t +42\) under both models: the Market Model and the Market-Adjusted Returns Model. On the other hand, the new bank created by the merger between Royal Bank of Scotland and National Westminster completely fails to provide any abnormal returns; the performance of the bank keeps decreasing month after month, from -60.9% to -137.6% under the MM, and from -60.1% to -128.8% under the MAR model.
<table>
<thead>
<tr>
<th>Bank Name</th>
<th>CAR as a percentage</th>
<th>Model</th>
<th>t+12</th>
<th>t+18</th>
<th>t+24</th>
<th>t+30</th>
<th>t+36</th>
<th>t+42</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allianz - Dresdner Bank</td>
<td>MM</td>
<td>7,7</td>
<td>55,0</td>
<td>94,1</td>
<td>76,2</td>
<td>70,6</td>
<td>83,3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>7,9</td>
<td>54,0</td>
<td>92,2</td>
<td>75,1</td>
<td>70,0</td>
<td>82,4</td>
<td></td>
</tr>
<tr>
<td>Banco Bilbao Vizcaya - Argentaria</td>
<td>MM</td>
<td>-8,5</td>
<td>-22,8</td>
<td>-30,0</td>
<td>-29,1</td>
<td>-48,8</td>
<td>-64,6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-8,2</td>
<td>-13,3</td>
<td>-8,3</td>
<td>-13,5</td>
<td>-6,1</td>
<td>-21,8</td>
<td></td>
</tr>
<tr>
<td>Banco Santander - BCH</td>
<td>MM</td>
<td>16,2</td>
<td>38,5</td>
<td>34,8</td>
<td>16,7</td>
<td>9,3</td>
<td>2,1</td>
<td></td>
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<tr>
<td></td>
<td>MAR</td>
<td>14,1</td>
<td>34,2</td>
<td>31,1</td>
<td>13,9</td>
<td>8,4</td>
<td>3,0</td>
<td></td>
</tr>
<tr>
<td>Bank of Scotland - Halifax Group</td>
<td>MM</td>
<td>3,2</td>
<td>26,2</td>
<td>11,6</td>
<td>18,0</td>
<td>17,3</td>
<td>10,4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-11,2</td>
<td>-13,5</td>
<td>-33,2</td>
<td>-16,3</td>
<td>-14,0</td>
<td>-15,8</td>
<td></td>
</tr>
<tr>
<td>Barclays - Woolwich</td>
<td>MM</td>
<td>-5,0</td>
<td>-20,5</td>
<td>-23,2</td>
<td>-11,2</td>
<td>-28,8</td>
<td>-31,5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-8,6</td>
<td>-25,7</td>
<td>-32,7</td>
<td>-26,1</td>
<td>-44,9</td>
<td>-43,9</td>
<td></td>
</tr>
<tr>
<td>BNP - Paribas</td>
<td>MM</td>
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<td>-0,7</td>
<td>-26,0</td>
<td>-37,2</td>
<td>-68,2</td>
<td>-71,8</td>
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<tr>
<td></td>
<td>MAR</td>
<td>-6,5</td>
<td>-4,0</td>
<td>-23,3</td>
<td>-31,6</td>
<td>-55,0</td>
<td>-49,5</td>
<td></td>
</tr>
<tr>
<td>Dexia - Artesia Banking Corp.</td>
<td>MM</td>
<td>0,2</td>
<td>18,8</td>
<td>28,6</td>
<td>18,7</td>
<td>6,2</td>
<td>5,8</td>
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<tr>
<td></td>
<td>MAR</td>
<td>-7,3</td>
<td>-3,7</td>
<td>-2,8</td>
<td>-6,9</td>
<td>-12,0</td>
<td>-16,0</td>
<td></td>
</tr>
<tr>
<td>HSBC - CCF</td>
<td>MM</td>
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<td>-17,1</td>
<td>-28,8</td>
<td>-49,6</td>
<td>-56,6</td>
<td>-60,4</td>
<td></td>
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<tr>
<td></td>
<td>MAR</td>
<td>5,0</td>
<td>-9,6</td>
<td>-16,9</td>
<td>-29,9</td>
<td>-35,3</td>
<td>-42,3</td>
<td></td>
</tr>
<tr>
<td>Hypovereinsbank - Bank Austria</td>
<td>MM</td>
<td>-6,7</td>
<td>20,8</td>
<td>12,8</td>
<td>73,3</td>
<td>76,3</td>
<td>38,8</td>
<td></td>
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<tr>
<td></td>
<td>MAR</td>
<td>-8,0</td>
<td>17,2</td>
<td>7,0</td>
<td>63,6</td>
<td>65,9</td>
<td>30,0</td>
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<tr>
<td>RBoS - National Westminster</td>
<td>MM</td>
<td>-60,9</td>
<td>-68,2</td>
<td>-89,0</td>
<td>-113,8</td>
<td>-121,1</td>
<td>-137,6</td>
<td></td>
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<tr>
<td></td>
<td>MAR</td>
<td>-60,1</td>
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<td>-108,2</td>
<td>-112,9</td>
<td>-128,8</td>
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<tr>
<td>AmSouth Bancorp. - First American Nat. Bank</td>
<td>MM</td>
<td>55,5</td>
<td>60,5</td>
<td>25,7</td>
<td>7,3</td>
<td>-19,3</td>
<td>-21,2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>54,9</td>
<td>60,0</td>
<td>26,7</td>
<td>9,9</td>
<td>-15,9</td>
<td>-16,2</td>
<td></td>
</tr>
<tr>
<td>Bank of America Corp. - FleetBoston Financial Corp.</td>
<td>MM</td>
<td>-9,3</td>
<td>-6,5</td>
<td>2,1</td>
<td>1,7</td>
<td>-9,8</td>
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<td>1,7</td>
<td>1,1</td>
<td>-10,5</td>
<td>-2,1</td>
<td></td>
</tr>
<tr>
<td>Bank One Corp. - First Chicago NBD Corp.</td>
<td>MM</td>
<td>18,2</td>
<td>62,3</td>
<td>100,8</td>
<td>75,3</td>
<td>51,4</td>
<td>38,7</td>
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<td></td>
<td>MAR</td>
<td>7,1</td>
<td>49,3</td>
<td>84,6</td>
<td>59,1</td>
<td>43,9</td>
<td>40,1</td>
<td></td>
</tr>
<tr>
<td>Chase Manhattan Corp. - J.P. Morgan &amp; Co., Inc.</td>
<td>MM</td>
<td>-5,5</td>
<td>9,7</td>
<td>-18,3</td>
<td>-17,9</td>
<td>-26,2</td>
<td>-8,8</td>
<td></td>
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<tr>
<td></td>
<td>MAR</td>
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<td>35,3</td>
<td>34,0</td>
<td>37,3</td>
<td>12,5</td>
<td>10,6</td>
<td></td>
</tr>
<tr>
<td>Citigroup, Inc. - Golden State Bancorp, Inc.</td>
<td>MM</td>
<td>-11,8</td>
<td>-6,5</td>
<td>2,3</td>
<td>16,9</td>
<td>22,4</td>
<td>22,9</td>
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<tr>
<td></td>
<td>MAR</td>
<td>-19,2</td>
<td>-26,9</td>
<td>-26,4</td>
<td>-11,4</td>
<td>-8,7</td>
<td>-8,7</td>
<td></td>
</tr>
<tr>
<td>First Union Corp. - Wachovia Corp.</td>
<td>MM</td>
<td>-15,8</td>
<td>-48,5</td>
<td>-50,0</td>
<td>-45,8</td>
<td>-38,5</td>
<td>-42,6</td>
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<td>MAR</td>
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<td>-34,4</td>
<td>-40,5</td>
<td>-44,1</td>
<td>-41,8</td>
<td>-45,7</td>
<td></td>
</tr>
<tr>
<td>Norwest Corp. - Wells Fargo &amp; Co.</td>
<td>MM</td>
<td>-8,6</td>
<td>11,5</td>
<td>-11,3</td>
<td>-41,7</td>
<td>-41,8</td>
<td>-48,1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-8,9</td>
<td>6,3</td>
<td>-14,0</td>
<td>-35,5</td>
<td>-33,5</td>
<td>-41,7</td>
<td></td>
</tr>
<tr>
<td>SunTrust - National Commerce Fin.</td>
<td>MM</td>
<td>-0,2</td>
<td>6,8</td>
<td>5,0</td>
<td>1,7</td>
<td>2,1</td>
<td>11,8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>0,9</td>
<td>8,1</td>
<td>8,9</td>
<td>6,5</td>
<td>8,9</td>
<td>20,8</td>
<td></td>
</tr>
<tr>
<td>Travelers Group - Citicorp</td>
<td>MM</td>
<td>12,1</td>
<td>15,2</td>
<td>7,1</td>
<td>-11,8</td>
<td>-37,0</td>
<td>-53,9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-18,8</td>
<td>-22,9</td>
<td>-33,8</td>
<td>-60,7</td>
<td>-66,0</td>
<td>-68,6</td>
<td></td>
</tr>
<tr>
<td>Washington Mutual, Inc. - A &amp; C</td>
<td>MM</td>
<td>13,3</td>
<td>44,3</td>
<td>88,0</td>
<td>55,4</td>
<td>8,7</td>
<td>-32,8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>3,1</td>
<td>30,4</td>
<td>66,9</td>
<td>32,2</td>
<td>-8,3</td>
<td>-40,4</td>
<td></td>
</tr>
<tr>
<td>Average (among the whole sample)</td>
<td>MM</td>
<td>-0,2</td>
<td>9,0</td>
<td>6,8</td>
<td>0,1</td>
<td>-11,6</td>
<td>-18,0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-4,1</td>
<td>3,4</td>
<td>1,8</td>
<td>-4,3</td>
<td>-12,8</td>
<td>-17,7</td>
<td></td>
</tr>
<tr>
<td>Median (among the whole sample)</td>
<td>MM</td>
<td>-0,3</td>
<td>10,6</td>
<td>3,6</td>
<td>1,7</td>
<td>-14,6</td>
<td>-15,0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MAR</td>
<td>-7,7</td>
<td>-3,8</td>
<td>-5,6</td>
<td>-9,2</td>
<td>-11,3</td>
<td>-16,1</td>
<td></td>
</tr>
</tbody>
</table>

Table 9: Results of CARs computations for each bank of the sample
The analysis of the average CARs show up negative abnormal returns at the beginning of the period studied, then an unambiguous improvement for about a year, a year and a half, but then the abnormal returns are negative again, whatever the model. Starting at -0.2% at time $t +12$, the CARs under the MM increase and become positive at periods $t +18$, $t +24$ and $t +30$, with respectively $+9\%$, $+6.8\%$ and $+0.1\%$, then the CARs become highly negative with $-11.6\%$ at time $t +36$ and $-18\%$ at time $t +42$.

The MAR gives almost the same trend regarding the average CARs, but it does start lower with $-4.1\%$ at time $t +12$, and the results recorded thereafter at periods $t +18$, $t +24$ and $t +30$ are respectively lower of $5.6\%$, $5\%$ and $4.4\%$ in comparison with the Market Model figures. Finally, the CAR recorded under the MAR at time $t +42$ is $-17.7\%$, which is almost the same as the last one recorded under the MM: $-18\%$.

The median CAR is negative under the MM at time $t +12$ with $-0.3\%$, but it gets better at times $t +18$, $t +24$ and $t +30$ with respectively, $+10.6\%$, $+3.6\%$ and $+1.7\%$. However, it goes down again at periods $t +36$ and $t +42$, with respectively $-14.6\%$ and $-15\%$. On the contrary, our computations under the MAR model for the median CARs clearly highlight a negative trend for the whole period we studied. The median CAR goes from $-7.7\%$ at $t +12$ to $-16.1\%$ at $t +42$, even if we notice a slight improvement at time $t +18$.

Ultimately, the study of individual performance emphasizes high differences in post-takeover abnormal returns. Moreover, the average and median CARs for the sample draw attention to the fact that Cumulative Abnormal Returns are generally negative in the post-takeover period, in spite of the improvement we can observe around a year and a half and two years after the takeover public announcement.

3. **Results of average CARs computations by geographical area**

After having determined the general trend for our study, we can now work on the comparison between the European banks and the U.S. banks.

<table>
<thead>
<tr>
<th>Average CARs</th>
<th>All banks</th>
<th>European banks</th>
<th>U.S. banks</th>
<th>Europe vs U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t +12$</td>
<td>-0.21%</td>
<td>-5.19%</td>
<td>4.77%</td>
<td>-9.96</td>
</tr>
<tr>
<td>$t +18$</td>
<td>8.95%</td>
<td>3.01%</td>
<td>14.89%</td>
<td>-11.88</td>
</tr>
<tr>
<td>$t +24$</td>
<td>6.81%</td>
<td>-1.51%</td>
<td>15.14%</td>
<td>-16.65</td>
</tr>
<tr>
<td>$t +30$</td>
<td>0.15%</td>
<td>-3.81%</td>
<td>4.10%</td>
<td>-7.90</td>
</tr>
<tr>
<td>$t +36$</td>
<td>-11.58%</td>
<td>-14.37%</td>
<td>-8.79%</td>
<td>-5.58</td>
</tr>
<tr>
<td>$t +42$</td>
<td>-18.02%</td>
<td>-22.53%</td>
<td>-13.50%</td>
<td>-9.03</td>
</tr>
</tbody>
</table>

**Table 10: Average CARs under the Market Model**

The performance of U.S. banks versus the European banks is highly emphasized on the table 10 and the figure 4. Under the MM, the U.S. banks of our sample recorded average Cumulative Abnormal Returns that are $5.58$ points (period $t + 36$) to $16.65$ points (period $t + 24$) higher than the ones reported for the European banks.
Furthermore, we can notice that European banks get positive abnormal returns +3.01% at only one period, a year and a half after the takeover public announcement. The performance of the U.S. banks is definitely better on the same periods. U.S. banks record positive abnormal returns from periods \( t+12 \) to \( t+30 \), with very high abnormal returns at times \( t+18 \) and \( t+24 \): +14.89% and +15.14%. However, we can notice that U.S. banks report negative abnormal returns on the last two periods of our study, with respectively -8.79% at period \( t+36 \) and -13.50% at time \( t+42 \). If we specifically look at the last period of our study, in period \( t+42 \), when European banks get negative abnormal returns with -22.53%, the U.S. banks in the same period also get negative abnormal returns, with -13.50%, which means a difference of 9.03 points.

Our findings with the Market-Adjusted Returns Model are quite similar. However, as we already mention earlier when we have compared the CARs averages under both models, the trend seems to be similar, but we can also observe that the level of abnormal returns recorded is every time lower under the MAR when compared to the MM.

<table>
<thead>
<tr>
<th>Average CARs</th>
<th>All banks</th>
<th>European banks</th>
<th>U.S. banks</th>
<th>Europe vs U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( t+12 )</td>
<td>-4.14%</td>
<td>-8.30%</td>
<td>0.01%</td>
<td>-8.31</td>
</tr>
<tr>
<td>( t+18 )</td>
<td>3.41%</td>
<td>-3.00%</td>
<td>9.83%</td>
<td>-12.83</td>
</tr>
<tr>
<td>( t+24 )</td>
<td>1.78%</td>
<td>-7.26%</td>
<td>10.82%</td>
<td>-18.08</td>
</tr>
<tr>
<td>( t+30 )</td>
<td>-4.27%</td>
<td>-7.98%</td>
<td>-0.57%</td>
<td>-7.42</td>
</tr>
<tr>
<td>( t+36 )</td>
<td>-12.76%</td>
<td>-13.59%</td>
<td>-11.94%</td>
<td>-1.66</td>
</tr>
<tr>
<td>( t+42 )</td>
<td>-17.73%</td>
<td>-20.27%</td>
<td>-15.18%</td>
<td>-5.08</td>
</tr>
</tbody>
</table>

Table 11: Average CARs under the Market-Adjusted Returns Model
In this case, the results of abnormal returns for European banks are negative for the six periods we studied, from -8.30% at \( t + 12 \), then -3% at \( t + 18 \), and then it keeps increasing until -20.27% at time \( t + 42 \). On the contrary, U.S. banks are able to record positive abnormal returns during the first half of our study, from \( t + 12 \) to \( t + 24 \) it does increase from 0.01% to 10.82%. Then, during the second half of our study, it keeps decreasing, from -0.57% at time \( t + 30 \) to -15.18% at time \( t + 42 \).

Once again, we can notice some high differences between the Cumulative Abnormal Returns recorded for European banks and the ones reported for the U.S. banks of our sample whatever the period, the differences range from 1.66 to 18.08 points.

Eventually, the results recorded at the last period of our study, at time \( t + 42 \), are quite similar, even if we can notice that the results of the U.S. banks are slightly better, but still negative in both cases, European banks get -20.27% whereas the U.S. banks get -15.18%.

![Figure 5: Average CARs under the Market-Adjusted Returns Model](image)

Finally, the trend given by both the MM and the MAR model are quite similar, even if we can observe higher results in average Cumulative Abnormal Returns under the MM. Under both models the results for the U.S. banks are better than the ones of European banks. The average Cumulative Abnormal Returns are highly negative for European banks in all periods but one (\( t + 18 \), under the MM), whereas the U.S. banks clearly report positive abnormal returns at periods \( t + 12, t + 18 \) and \( t + 24 \) under both models, which suggests that the level of abnormal returns recorded after the merger or acquisition may depend on the geographical area where the takeover takes place.
Chapter 5
ANALYSIS AND CONCLUSIONS
1. Summary of literature review

The studies conducted to measure the post-takeover performance often lead to similar results, even if the period studied and the models used are quite different.

Baradwaj, Dubofsky and Fraser\(^{150}\) find out by using CARs and the Market Model that defensive acquirers suffer from significant negative returns during the 49 days of the study after the public announcement; the premium paid being the main reason for these abnormal returns. Tan and Hooy\(^{151}\) do not report significant gain, but they insist on the mandatory restructuring in Malaysian banking industry after the Asian crisis.

Regarding the literature that deals with takeovers in every industry, Asquith\(^{152}\) demonstrates that acquiring companies report significant negative abnormal returns in the 12 months that follow the public announcement date. Andrade, Mitchell, and Stafford’s\(^{153}\) findings are consistent with Asquith’s\(^{154}\) results as they confirm that acquirers get significant abnormal returns, however they work on a very small window around the acquisition. Chatterjee\(^{155}\) demonstrates that firms acquiring very large companies get the same negative abnormal returns as the whole population of takeovers for the 36 months after the announcement. Aw and Chatterjee\(^{156}\) show up that domestic takeovers perform better than cross-border ones. However they highlight that even the domestic takeovers record negative abnormal returns for the 24 months following the public outcome date.

All these empirical findings are not consistent with Franks et al.\(^{157}\) results. They find out that acquirers do not record returns that are significantly different from zero. Furthermore, they point out that the previous studies dealing with post-takeover performance and showing negative abnormal returns may be explained by a poor benchmarks selection.

The results of Dullard and Hawtrey\(^{158}\) research on acquirers show positive abnormal returns for the 36 months following the acquisition by using both the Market Model and an industry-adjusted returns model. However, it is important to notice that they specifically focus on the Australian market.


2. **Summary of our empirical findings**

The individual study of every single bank CAR for the periods \( t +12, t +18, t +24, t +30, t +36 \) and \( t +42 \) highlight a high level of diversity in our sample as for instance Allianz – Dresdner Bank records a CAR above 80% at time \( t +42 \) under both models whereas Royal Bank of Scotland – National Westminster gets a CAR around -130% at time \( t +42 \) under both models. In spite of this extreme results, the average and the median CARs for the whole sample clearly show up a negative trend for the abnormal returns, which confirms the Hypothesis 1.

We can also notice that the trend given by the two models we implement in this study, the Market Model and the Market-Adjusted Returns model, are quite similar, even if we observe slightly higher results in Cumulative Abnormal Returns under the MM.

Under both models the results for the U.S. banks are better than the ones of European banks: the differences range from 5.58 to 16.65 points under the MM, and from 1.66 to 18.08 under the MAR model. The Cumulative Abnormal Returns are highly negative for European banks in all periods but one \( (t +18, \text{under the MM}) \), whereas the U.S. banks clearly report positive abnormal returns at periods \( t +12, t +18 \) and \( t +24 \) under both models. Ultimately, the European banks record CARs at time \( t +42 \) of -22.53% and -20.27% under respectively the MM and the MAR model, whereas the U.S. banks of our sample get at the same time -13.50% and -15.18% under the MM and the MAR model. Eventually the Hypothesis 2 is not confirmed as the level of performance is not the same in the U.S. as in Europe.

3. **Comparison between the previous studies and our results**

The findings of this paper are neither consistent with the work of Dullard and Hawtrey\(^{159}\) nor the Franks et al.\(^{160}\) study. The formers find out positive abnormal returns whereas the latters show that takeovers create returns that are not significantly different from zero.

If we consider our whole sample, mixing the European and U.S. banks, our results seem to be consistent with the findings of Asquith\(^{161}\), the ones of Tan and Hooy\(^{162}\) and also the ones of Chatterjee\(^{163}\). However if we analyse deeper the results, Asquith\(^{164}\) illustrates that acquiring companies get negative abnormal returns 12 months after the public announcement, whereas we find that the U.S. banks of our sample record positive abnormal returns at that time \( (t +12): +4.77\% \) under the MM and \(+0.01\% \) under the MAR model.

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Furthermore, even if we may argue that the choice of the models used is definitely critical, it does not seem to define a specific range of results as Dullard and Hawtrey\(^{165}\) get positive abnormal returns for the Australian market by using the Market Model and an industry-adjusted returns model while the studies of Chatterjee\(^{166}\), the ones of Aw and Chatterjee\(^{167}\) and our empirical findings record negative abnormal returns in the post-takeover period by using the Market Model.

However, this model is clearly dependent on the market returns if the study is specifically looking at a market, instead of looking at takeovers that happened in several different markets. For instance, Dullard and Hawtrey\(^{168}\) focus on the Australian market, the studies of Chatterjee\(^{169}\) and the ones of Aw and Chatterjee\(^{170}\) only deal with acquirers from UK market, and we only focus on two different markets, Europe and U.S..

Aw and Chatterjee\(^{171}\) find out that UK companies acquiring domestic firms get better results than UK companies acquiring foreign companies from U.S. or Continental Europe. In our case, U.S. banks acquiring domestic banks perform better than European banks that acquire other European banks. However we can not justify this by the cross-border impact as cross-border takeovers account for only two of the ten European takeovers we chose.

The main explanation might be the differences between the two markets we work on. We could also easily explain this by the super-performance of the whole population of banks in the U.S. in comparison with the performance of the whole population of European banks. Furthermore, as the restructuring in the U.S. banking industry happened earlier than in Europe, we may argue that U.S. banks have more experience in the takeover area.

4. Critics and suggestions for further studies

Regarding the width of the field in which we decided to get involved, we can easily understand the large number of different topics that could follow, complete, or illustrate this one.

- **The characteristics of the different markets:** As these banks or bank holding companies, that we studied here, have operations in several markets, we should give a relative margin in these results. Indeed, a more accurate study would have been to measure the characteristics of the different markets (like market growth or bank growth) for firms with multi-market operations and to measure deeper the impact of

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\(^{171}\) Ibid
such geographical location and environment on the performance of bank mergers and acquisitions.

- **The juridical side and bank deregulation:** A deeper study would involve taking in consideration differences among the countries (the different states in the United States as the different lands in Europe) in the laws governing bank expansion and activities. Indeed considering a powerful phenomenon like bank deregulation, we could study more in depth the large process and thus the impact of the bank deregulation since thirty years on the banking sector and particularly on the concentration and integration of different merging banks between each other. For instance, it is important to underline here that the European Commission\textsuperscript{172} establishes some rules and restriction for mergers and acquisitions taking mainly in consideration the question of maintaining a sufficient level of competition in the sector.

- **The best deal?** Based on the requirement for higher post-acquisition performance and taking in consideration the effective level of this performance, we could wonder if the achieved acquisition was the best deal in term of price offers and choice of the entities to be merged as each potential acquirer has a very large number of acquisition targets to choose from, and each acquisition target faces a very large number of potential acquirers.

We could study further the characteristics of the best target firm taking in consideration such determinants like:

- **The share price:** For example some analysts like Hannan and Rhoades\textsuperscript{173} propose that a high market share may be a particularly desirable characteristic of a target firm. But on the other side, the deal may be much more expensive and thus the acquirer might expect for a higher post performance.

- **Equity of the firm:** On a same view as above and considering the capital-asset ratio ($\text{Cap} / \text{A}$), companies with a relatively high ratio may be attractive targets because of the possibility for the acquirer of reducing capital holdings after the acquisition and then increasing return on equity.\textsuperscript{174} On the other side, as mentioned above, such high capitalization of target firms may be a brake to the acquisition considering the higher costs of such an investment.

These two criteria present only a small part of all the criteria and determinants that we have to take in account in an acquisition process. These criteria explained here as examples make us state that if the best deal may be very difficult to determine, we could talk here more about the best trade-off between the different determinants and variables of such acquisitions. Studying for the best trade-off taking in consideration different cases of bank mergers and acquisitions could be another kind of further research to our existing study.

- **The determinants of such acquisitions:** Taking in consideration our results added to the different past empirical studies, an effective further research could be to study in


\textsuperscript{174} Ibid
depth the concrete reasons of such mergers and acquisitions in the banking industry. Indeed, regarding the large part of post-taking negative abnormal returns in the studies, we could assert that performance may not be the first and main criterion for so many bank mergers and acquisitions. Based on some other determinants like culture, human resources management or effective economies of scale for example, we could conduct a study supported by a qualitative analysis combining literature review and interviews of main stakeholders in a sample of bank mergers and acquisitions.

5. Criteria of truth

5.1. Reliability

As already mentioned in the discussion to literature review part, reliability of our study is based on the originality and the age of the sources and the scientific approach we implemented all along this approach. The combination of the use of first and second sources with a strong part of first sources, the relative young age of the sources we used all along our study from literature review to data collection and the scientific approach we conferred to the different sources we used, as the scientific approach in the methodology that we implemented all along this study, may confer a sufficient level of reliability to our study.

5.2. Validity

Based on Bryman and Cramer175 and Shadish, Cook and Campbell176 books and as previously defined in the discussion to literature review part, validity can be studied on an internal or external side.

Our study was realised on a sample of 20 bank mergers and acquisitions composed by 10 European bank acquisitions and 10 US bank acquisitions. In addition to the reliability we give to this study and considering the significance of our results with the concrete apparition of a pattern that we could combine with some former studies, we may accept a relatively high level of internal validity for our study.

This mind may be confirmed by the use of a tool like Thomson Datastream Advances to collect data and by the implementation of such models like the Market Model, the Market-Adjusted Returns model, and the Cumulative Abnormal Returns that confer a high level of confidence to our results.

Considering external validity, it might be difficult to extend these results to most of the countries. Indeed, even if some common results with many other studies may be observed, some important aspects like the geographical area, the economic, business and cultural criteria based on micro and macro economic conditions, and the part of personal and professional implementation of such mergers and acquisitions by the different stakeholders make this kind of studies relatively difficult to generalize. Nevertheless, parts of such a study might be taken into account and used in some further studies like a common basis to most of the situations.

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Takeover.InvestorWords.com  


Wikimedia Foundation, Inc.  
### Review of previous studies dealing with takeovers

<table>
<thead>
<tr>
<th>STUDY</th>
<th>SAMPLE PERIOD</th>
<th>SAMPLE SIZE</th>
<th>METHOD</th>
<th>POST-TAKEOVER PERIOD</th>
<th>CONCLUSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baradwaj, Dubofsky and Fraser (1996) (US)</td>
<td>1982-1993</td>
<td>19</td>
<td>Abnormal returns, CAR, OLS market model</td>
<td>49 days (from +11 to +60)</td>
<td>Negative returns to defensive acquirers caused by a deflation in a takeover premium that previously existed in their stock prices.</td>
</tr>
<tr>
<td>Hannan and Rhoades (1985) (US)</td>
<td>1971-1982</td>
<td>201</td>
<td>ROA / ROE / RELROA / RELROE / CAP/A</td>
<td>N/A</td>
<td>Large market shares, low capital-asset ratio and operations in urban areas might increase target bank attractiveness.</td>
</tr>
<tr>
<td>Lin, Hung and Li (2006) (US)</td>
<td>1997-2002</td>
<td>267</td>
<td>MTB, relative MTB to S&amp;P 500, ROA, EBIT margin</td>
<td>36 months</td>
<td>Banking M&amp;A could be very effective when the firm had high HR capability. HR capability has a direct impact on firm performance.</td>
</tr>
<tr>
<td>Lindblom and Von Koch (2002) (Sweden)</td>
<td>1997</td>
<td>2</td>
<td>The balanced scorecard approach, ROE, ROIF, ROFL</td>
<td>N/A</td>
<td>Higher performance by complementarity (&quot;offensive&quot; merger) than by research of a higher level of cost reduction (&quot;defensive&quot; merger).</td>
</tr>
<tr>
<td>Andrade, Mitchell and Stafford (2001) (US)</td>
<td>1973-1998</td>
<td>3,688</td>
<td>Abnormal returns computation</td>
<td>1 day</td>
<td>“It is difficult to claim that acquiring firm shareholders are losers in merger transactions, but they clearly are not big winners like the target firm shareholders”.</td>
</tr>
<tr>
<td>Aw and Chatterjee (2004) (US)</td>
<td>1991-1996</td>
<td>79-77</td>
<td>MAR model Market Model</td>
<td>t+6 months, t+12, t+18 and t+24</td>
<td>CARs are generally negative in a period up to two years after the takeover. Some differences inside the sample period between cross border and domestic takeover targets.</td>
</tr>
<tr>
<td>Dullard and Hawtrey (2008) (Australia)</td>
<td>2001-2003</td>
<td>45</td>
<td>A one-factor market model and an industry-adjusted returns model based upon the Global Industry Classification Standard</td>
<td>36 months</td>
<td>Post-takeover AR are positive for each of the three years following the takeover. Acquirer companies significantly outperform the external market benchmark and outperform other firms in their industry post-takeover.</td>
</tr>
<tr>
<td>Franks et al. (1991) (US)</td>
<td>1975-1984</td>
<td>399</td>
<td>Eight-portfolio Benchmark</td>
<td>36 months</td>
<td>AR are not significantly different from zero.</td>
</tr>
<tr>
<td>Healy, Palepu and Ruback (1997) (US)</td>
<td>1979-1984</td>
<td>50</td>
<td>Accounting performance, Cash flow returns on assets</td>
<td>5 years</td>
<td>No additional cash flow for the acquirers.</td>
</tr>
</tbody>
</table>