THE MARKET REACTION TO BANK MERGERS AND ACQUISITIONS IN EUROPE

PRIOVOLOU MARIA

Thesis submitted

to the Department of Accounting and Finance

of the Athens University of Economics and Business

as partial fulfillment of the Requirements for the

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Athens

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CERTIFICATION OF THESIS PREPARATION

"I hereby declare that this particular thesis has been written by me, in order to obtain the Postgraduate Degree in Accounting and Finance, and has not been submitted to or approved by any other postgraduate or undergraduate program in Greece or abroad. This thesis presents my personal views on the subject. All the sources I have used for the preparation of this particular thesis are mentioned explicitly with references being made either to their authors, or to the URL's (if found on the internet)".

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PRIOVOLOU MARIA

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Περίληψη

Σκοπός της παρούσας εργασίας είναι η μελέτη της επίδρασης που έχει η ανακοίνωση της απόφασης για πραγματοποίηση μιας συγχώνευσης ή εξαγοράς στην απόδοση των μετοχών, τόσο των εξαγοράζουσων, όσο και των εξαγοραζόμενων τραπεζών στην Ευρώπη, για το χρονικό διάστημα 1997-2016. Το τελικό δείγμα βασίζεται σε 84 εξαγοράζουσες και 52 εξαγοραζόμενες τράπεζες. Οι μετοχές όλων των τραπεζικών οργανισμών που συμπεριλήφθηκαν στο τελικό δείγμα διαπραγματεύονται δημόσια σε οργανωμένα χρηματιστήρια. Επιπλέον, όλες οι συγχωνεύσεις και εξαγορές είναι ολοκληρωμένες και ο αγοραστής μετά την λήξη της διαδικασίας διαθέτει τουλάχιστον το 51% των μετοχών της εξαγοραζόμενης τράπεζας. Για τις ανάγκες της μελέτης, κάθε συγχώνευση ή και εξαγορά θεωρείται επιχειρηματικό συμβάν.

Το πρώτο μέρος της διπλωματικής εργασίας επικεντρώνεται στη θεωρητική προσέγγιση του θέματος. Ειδικότερα, το πρώτο κεφάλαιο εισάγει τον αναγνώστη στη σημασία και τα αποτελέσματα που επιφέρουν οι συγχωνεύσεις και οι εξαγορές, ενώ επιπλέον προσδιορίζεται με σαφήνεια ο ερευνητικός σκοπός της εργασίας. Στο δεύτερο κεφάλαιο πραγματοποιείται εκτεταμένη βιβλιογραφική επισκόπηση, μέσω της οποίας αρχικά γίνεται οριοθέτηση των εννοιών «συγχώνευση» και «εξαγορά». Φανερώνεται ότι και οι δύο έννοιες αναφέρονται σε διαδικασίες αναδιοργάνωσης ενός οργανισμού, αλλά αυτό που τις διαφοροποιεί είναι η αλληλεξάρτηση μεταξύ των εμπλεκόμενων οργανισμών. Η βιβλιογραφική επισκόπηση συνεχίζεται με την παράθεση των κύριων μορφών αλλά και των σημαντικότερων κινήτρων για συγχωνεύσεις και εξαγορές, τα οποία είναι βασισμένα σε διάφορα θεωρητικά μοντέλα. Παρουσιάζονται, επιπλέον, τα αποτελέσματα εμπειρικών μελετών που φανερώνουν τα εν λόγω κίνητρα, από τις οποίες αναδεικνύεται ότι αυτά είναι η επιθυμία επίτευξης μεγαλύτερης κερδοφορίας και αποτελεσματικότητας μέσω επέκτασης της αγοράς, βελτίωσης προϊοντικού χαρτοφυλακίου, διαφοροποίησης προσφερόμενων υπηρεσιών, οικονομιών κλίμακας, ανταπόκρισης στις μεταβαλλόμενες οικονομικές συνθήκες, καλύτερης πρόσβασης στις διεθνείς χρηματαγορές και κεφαλαιαγορές.

Η βιβλιογραφική επισκόπηση συνεχίζεται με αναφορά στους καθοριστικούς παράγοντες που επηρεάζουν την επιτυχία των συγχωνεύσεων και των εξαγορών. Παρουσιάζονται οι σημαντικότερες θεωρίες που σχετίζονται με αυτό το θέμα και συγκεκριμένα οι λεγόμενες παραδοσιακές και οι οργανωτικές θεωρίες. Έπειτα, γίνεται

προσπάθεια ομαδοποίησης αυτών με στόχο την ανάπτυξη ενός συγκεντρωτικού επεξηγηματικού μοντέλου. Στη συνέχεια, παρουσιάζονται τα αποτελέσματα εμπειρικών μελετών σχετικά με τους παράγοντες επιτυχίας που εμφανίζονται στο εν λόγω μοντέλο. Σύμφωνα με αυτά, τα ιδιαίτερα χαρακτηριστικά των εμπλεκομένων οργανισμών αλλά και της συναλλαγής, οι περιβαλλοντικοί παράγοντες, καθώς και παράγοντες που σχετίζονται με την κουλτούρα των οργανισμών είναι οι σημαντικότεροι παράγοντες που καθορίζουν την επιτυχία των συγχωνεύσεων και των εξαγορών.

Επιπρόσθετα, στο κεφάλαιο της βιβλιογραφικής επισκόπησης γίνεται αναφορά στις μεθοδολογίες υπολογισμού της αποδοτικότητας των Σ&Ε, οι οποίες είναι η ανάλυση επιχειρηματικών συμβάντων, η ανάλυση αποτελεσματικότητας και η ανάλυση επίδοσης. Παρουσιάζονται τα αποτελέσματα εμπειρικών ερευνών που χρησιμοποιούν τις εν λόγω μεθοδολογίες. Σε ό,τι αφορά στην ανάλυση επιχειρηματικών συμβάντων, οι διάφορες έρευνες καταλήγουν στο ότι οι συγχωνεύσεις και οι εξαγορές δημιουργούν αξία κυρίως στους μετόχους των εξαγοραζόμενων τραπεζών, ενώ οι υπεραποδόσεις των εξαγοράζουσων οργανισμών είναι οριακά θετικές ή και αρνητικές. Από την άλλη, οι μελέτες που βασίζονται στις άλλες δύο μεθοδολογίες που χρησιμοποιούν διάφορα λογιστικά δεδομένα για την αξιολόγηση των αποτελεσμάτων των Σ&Ε, επικεντρώνονται κυρίως στη εξέταση της σχέσης κόστους – οφέλους.

Στο τρίτο κεφάλαιο της διπλωματικής εργασίας, παρουσιάζεται η μεθοδολογία που ακολουθήθηκε για να απαντηθεί το κύριο ερευνητικό ερώτημα της εργασίας. Γίνεται αναλυτική αναφορά στη μέθοδο των επιχειρηματικών συμβάντων, αλλά και στο προσαρμοσμένο υπόδειγμα απόδοσης της αγοράς που χρησιμοποιήθηκε στην εργασία. Ωστόσο, παρουσιάζονται και άλλα υποδείγματα που εμφανίζονται ευρέως στη βιβλιογραφία, όπως το υπόδειγμα της προσαρμοσμένης απόδοσης ανά συγκρίσιμη περίοδο, το υπόδειγμα της αγοράς, το υπόδειγμα που βασίζεται στη μέθοδο των Scholes & Williams, το υπόδειγμα που χρησιμοποιεί τα μοντέλα GARCH και EGARCH, καθώς και το τριπαραγοντικό μοντέλο των Fama και French. Επίσης, γίνεται αναφορά στους δύο βασικούς ελέγχους σημαντικότητας που χρησιμοποιήθηκαν για την αξιολόγηση των αποδόσεων των μετοχών των τραπεζών που συμπεριλήφθηκαν στο τελικό δείγμα και συγκεκριμένα ο έλεγχος τυπικής απόκλισης χρονολογικών σειρών και ο έλεγχος τυπικής απόκλισης διαστρωματικών δεδομένων. Το κεφάλαιο της μεθοδολογίας ολοκληρώνεται με την παρουσίαση της παλινδρόμησης με τη μέθοδο

των ελάχιστων παραγόντων που χρησιμοποιήθηκε για τη διερεύνηση της σχέσης ανάμεσα στις αντιδράσεις των τιμών των μετοχών και συγκεκριμένων παραγόντων που αφορούν στα χαρακτηριστικά των τραπεζών. Ειδικότερα, ως επεξηγηματικές μεταβλητές καθορίστηκαν η απόδοση των περιουσιακών στοιχείων (ROA), η απόδοση των ιδίων κεφαλαίων (ROE), τα κέρδη ανά μετοχή (EPS), η αναλογία λογιστικής προς αγοραίας αξίας (B/M), το μέγεθος της τράπεζας και η έδρα (γεωγραφική θέση τραπεζών).

Τα αποτελέσματα που προκύπτουν από την παρούσα μελέτη συμφωνούν με την υπάρχουσα βιβλιογραφία, υποδεικνύοντας ότι οι αντιδράσεις των επενδυτών σε ανακοινώσεις συγχωνεύσεων και εξαγορών δημιουργούν αξία για τους μετόχους των εξαγοραζόμενων τραπεζών. Αναλυτικότερα, τα ευρήματα ανέδειξαν ότι οι μέσες υπεραποδόσεις των εξαγοράζουσων τραπεζών ήταν στατιστικά μη σημαντικές για ολόκληρη την εξεταζόμενη περίοδο. Μια μέρα πριν από την ανακοίνωση της συναλλαγής η μέση υπεραπόδοση ήταν οριακά θετική, ενώ την ημέρα της ανακοίνωσης ήταν θετική, αλλά πολύ χαμηλή. Ωστόσο, την ημέρα μετά την ανακοίνωση η μέση υπεραπόδοση ήταν αρνητική και διατηρήθηκε έτσι έως και την $9^η$ ημέρα μετά την ανακοίνωση, με εξαίρεση την $2^η$ ημέρα, όταν εμφανίστηκε και πάλι ως οριακά θετική. Αντίθετα, για τις εξαγοραζόμενες τράπεζες οι αρνητικές υπεραποδόσεις υπερτερούν μέχρι την ημέρα της ανακοίνωσης. Την ημέρα της ανακοίνωσης παρατηρήθηκε θετική και σημαντική μέση υπεραπόδοση, η οποία επιπλέον ήταν πολύ υψηλότερη από εκείνη των εξαγοράζουσων τραπεζών. Μειωμένη υπεραπόδοση παρατηρήθηκε μία ημέρα μετά την ανακοίνωση, η οποία ήταν επίσης σημαντική. Καθώς απομακρυνόμαστε από την ημέρα ανακοίνωσης, παρατηρήθηκαν χαμηλότερες υπεραποδόσεις.

Παρόμοια ήταν τα αποτελέσματα για τις αθροιστικές μέσες υπεραποδόσεις που εξετάστηκαν για τις χρονικές περιόδους [-1,0]; [0,+1]; [-1,+1]; [-2,+2]; [-5,+5]; [-10,+10]. Συγκεκριμένα, τα αποτελέσματα για τις εξαγοραζόμενες τράπεζες ήταν στατιστικά θετικά για όλες τις χρονικές περιόδους. Οι υψηλότερες αθροιστικές υπεραποδόσεις παρατηρήθηκαν τις ημέρες γύρω από την ανακοίνωση. Αντίθετα, για τις εξαγοράζουσες τράπεζες υπήρξαν οριακά θετικά και μη στατιστικά σημαντικά αποτελέσματα για τις πρώτες τέσσερις χρονικές περιόδους και αρνητικά για το χρονικό παράθυρο [-10,+10]. Γίνεται κατανοητό, λοιπόν, ότι οι μέτοχοι των εξαγοραζόμενων τραπεζών επωφελούνται από θετικές και σημαντικές υπεραποδόσεις, ενώ οι μέτοχοι των εξαγοράζουσων τραπεζών αντιμετωπίζουν οριακά θετικές και στατιστικά μη

σημαντικές υπεραποδόσεις την ημέρα της ανακοίνωσης καθώς και αρνητικές υπεραποδόσεις κατά την περίοδο μετά την ανακοίνωση.

Τέλος, η ανάλυση παλινδρόμησης με τη μέθοδο των ελαχίστων τετραγώνων (OLS) ανέδειξε ότι το μέγεθος, η γεωγραφική έδρα και η λογιστική προς αγοραία αξία έχουν στατιστικά σημαντική επίδραση στις αθροιστικές υπεραποδόσεις των εξαγοραζόμενων τραπεζών. Αυτό οδηγεί στο συμπέρασμα ότι οι συγχωνεύσεις και οι εξαγορές είναι πιο επικερδείς για τους μετόχους των εξαγοραζόμενων τραπεζών όταν αυτές είναι μικρού μεγέθους, έχουν υψηλή λογιστική προς αγοραία αξία και η συναλλαγή επικεντρώνεται στη γεωγραφική διαφοροποίηση. Για τις άλλες εξεταζόμενες μεταβλητές (ROA, ROE και κέρδη ανά μετοχή) δεν φανερώθηκε στατιστικά σημαντικά επίδραση.

Λέξεις-κλειδιά: Συγχωνεύσεις και εξαγορές, τραπεζικός τομέας, αθροιστικές υπεραποδόσεις.

Abstract

The purpose of the thesis is to study the stock price reaction due to merger and acquisition (M&A) announcement both target and acquiring banks in Europe for the period 1997-2016. The final sample is based on 84 transactions of acquiring banks and 52 transactions of target banks. Both acquirers and targets included in the final sample were publicly listed, while in addition the M&A deals were completed and the acquirer owned a minimum of 51% of shares after the acquisition. A merger or an acquisition announcement is considered as an event.

The results agree with the existing literature, indicating that the investors' reactions to merger and acquisition announcements create value for the shareholders of the target banks. In particular, the shareholders of target banks benefit from positive and significant abnormal returns, while the shareholders of acquiring banks are confronted with marginally positive and statistically not significant abnormal returns on the day of the announcement as well as negative returns during the period after the announcement.

Additionally, in the present thesis, regression analysis using the least squares method (OLS) was performed in order to be investigated the factors influencing the value created for target banks. According to the results, the size, the geographical location, and the book to market ratio have a statistically significant effect on the cumulative abnormal returns of the target banks. This leads to the conclusion that mergers and acquisitions are more profitable for the shareholders of the target banks when they are small in size, have high book to market ratio and the transaction focuses on geographical diversification. For the other examined variables (Return of Assets (ROA), the Return on Equity (ROE), Earnings per Share (EPS)) there were no statistically significant results.

Key words: Mergers and acquisitions, banking sector, cumulative abnormal returns.

CHAPTER 1: INTRODUCTION

Nowadays, businesses are operated in a changing environment requires consecutive radical reorganizations and restructurings. This leads companies to looking for different ways of expanding in order to strengthen their market position. In this direction, mergers and acquisitions (M&A) are strategies, that are used very frequently and mainly in the banking sector, as they offers the potential for value creation and exploitation. However, the M&As' process is rather complicated, which stems from the fact that the involved companies have often significant differences in terms of culture, functions and management ideology. All these require effective treatment so that the process to leads to high returns. The most important expectations of companies involved in M&As are to create value through better efficiency, cost savings through economies of scale, larger product offerings and other synergies.

M&As affect industries, local economies and, in some cases, even the global economy. Especially after the beginning of the global financial crisis, businesses that have survived face a restructuring dilemma to ensure that they will maintain their competitiveness. M&As are one of the most effective ways of restructuring. However, before any decision is made, it is important for each involved business to look at the real costs, impacts and likelihood of achieving the original M&As' target.

It has been proven that the M&As affects directly the prices of common stocks of both the acquiring and target firms. However, according to the existing literature, each firm is affected in a different way depending on the value created amongst the stockholders. Empirical studies in banking sector show that in M&A announcement, the target firms earn a significant positive abnormal return (Tsangarakis et al., 2013; Campa & Hernando, 2006; Goddard et al., 2012; Cybo-Ottone & Murgia, 2000; Scholtens & de Wit, 2004; Campa & Hernando, 2006; Ismail & Davidson, 2007), as compared to the acquiring banks that yield insignificantly returns which are negative or marginally positive (Tsangarakis et al., 2013; Hagendorff et al., 2008; Campa & Hernando, 2006; Goddard et al., 2012; Scholtens & deWit, 2004; Tourani-Rad & Van Beek, 1999; Lepetit et al. 2004; Beitel et al., 2004).

The motivation of this study is, hence, to understand the impact of M&A announcement on prices of common stocks of the target and acquiring European banks. The structure of the research is in the following pattern. The next section comprises the

literature review concerning the types, motives and determinants of M&As. Moreover evidence from similar with the present studies are presented. Subsequently the thesis describes the research methodology applied to the data of the M&A activity in European banking sector. Further the results obtained through the application of the said methodology, are critically analyzed to determine if the transaction announcement creates abnormal returns to the target or the acquiring banks. Finally, the main conclusions of the thesis are presented.

CHAPTER 2: LITERATURE REVIEW

2.1 Definition of key concepts

The distinction between the terms "merger" and "acquisition" is not clear. While the two terminologies are different, they are often used interchangeably (Gribblatt & Titman, 2006). The separation difficulty of the terms is due to that both mergers and acquisitions (M&A) are considered operational restructuring processes that eventually lead to changing the ownership status of company (Yabugbe & Longe, 2013). This view is reflected in the definition given by Copeland & Weston (1988), according to which M&A refer to issues related to corporate restructuring, corporate control as well as changes in ownership.

However, what differentiates the two terms is mainly the interdependence between the companies involved. Specifically, during the acquisition, one company which is usually large and financially independent buys another smaller company (Alao, 2010). However, the two organizations remain legally independent entities. It is noted that when one company acquires another, this also means that the first takes over the assets of the second. This implies a change in control of the company (Crouzille et al., 2005). On the other hand, the merger is a legal activity in which two or more enterprises merge into new joint organization and the acquired (target) company needs to exit the market (Alao, 2010; Malik et al., 2014). The risks and benefits of the new entity are shared between the shareholders on both sides (Crouzille et al., 2005).

Moreover, it is important to be note that the type of currency used in order to be achieved merger or acquisition, is different. During the acquisition, a company acquires shares or profits of another company against currency exchange. On the other hand, during the merger, no amount of money is paid but participation shares. In other words, assets are transferred. Legally speaking, the result of the merger is one entity with a new ownership and management structure. The acquisition, however, has as a result one company to takes over of all the business management decisions of the other company (Ginsburg & Levin).

2.2 Categorization of Merger and Acquisition

There are three main forms of M&A, namely: a) merger (consolidation); b) acquisition of shares; and c) acquisition of assets. The merger or in other words consolidation, as was already mentioned is the process during which one company called "bidder" absorbs another company called "target". After the completion of the consolidation, the target company do not exist as separate legal entity. The consolidation process leads to the creation of a new organization. On the other hand, in the second case, the bidder buys shares of the target company. However, the target retains its rights. Finally, in the third case, all the assets of the target company are acquired by the bidder. It is underlined that both acquisition of shares and acquisition of assets, the target company continues to exist (Hillier et al., 2010).

On the other hand there are different types of M&A: horizontal, vertical, conglomerate and cross-border (Hillier et al., 2010). Horizontal M&As occur when a company is consolidated with or acquires another company in the same industry (Brealey et al., 2006). The main purpose is the reducing of competition (Sherman & Hart, 2010). Most of the M&As in the banking sector, belong to this category. On the other hand, vertical M&As occur between enterprises in different stages of the production process (Brealey et al., 2006). Usually, it is for acquisitions or mergers between supplier and customer (Brealey et al., 2006). Potential targets are the vertical integration of production, the achievement of price controls and the reduction of production costs (Papadakis, 2002). Conglomerate acquisition happens when bidder and target firms are not related to each other (Hillier et al., 2010) and the purpose is usually the accumulation of business power which would be beneficial for both sides (Sherman & Hart, 2010). Finally, cross – border M&As refer to those which happen outside the national boundaries in which the companies belong (Brealey et al., 2006). The main purpose is to be achieved a market expansion (Sherman & Hart, 2010).

In terms of the procedure followed, M&As are divided into friendly and hostile. In the first case, both sides want to do consolidation. In the second case, however, the target company does not agree. Thus, the bidder collects shares of another company (usually a competitive company) so that it gradually acquires control even though the target company expresses objections (Schnitzer, 1996). Finally, there are another two specific M&A types. The first is the "leveraged buyout" for which usually is not used equity, but borrowed funds from banks. The second is the acquisition of companies by

their management. In other words, the company is being bought by its executives (Kaplan & Stromberg, 2008).

2.3 Merger and Acquisition Motives

The motives for M&As are many and very complex. They could be explained by several theoretical models. One of these is the "Market Power Theory" according to which market power can lead to higher competitiveness and profits. For example, M&As in the banking sector, may lead to reduction in the number of banks and therefore to shrinking of competition. This increases the concentration of the market and consequently its power. The result will be the increase in prices appointed by banks and finally the increase of business profits of both bidders and target companies (Hankir et al., 2011).

Another theory explaining the motives for M&As is the "Resource Based Theory", according to which each company differs from its competitors in terms of its resources and capabilities, as well as the way in which it exploits them. Mergers and acquisitions lead to the unification of these resources and capabilities, which results in increased cost savings due to increased efficiency and benefits. In short, the performance of both sides is improving (Hankir et al., 2011).

Also, "Agent Theory" explains the relationship between principals and agents and deals with resolving problems that may exist in their relationship. For example, shareholders have incentives to drive their companies to grow beyond their size. This leads to improving of capabilities of executives. Based on this theory, the main motivation for M&As is not economic, but the personal development and improvement (Asimakopoulos & Athanasoglou, 2013).

On the other hand, according to Trautwein (1990) the theories of M&As motives can be classified into seven groups. In detail, "Monopoly Theory" views M&As as being planned and executed to achieve market power, while the "Efficiency theory" to achieve synergies. According to the third theory which is the "Valuation theory", bidder managers have better information about the target's financial performance than the stock market, while the "Process Theory" is based on that mangers have only limited information and therefore decide on imperfect information. On the other, the "Empire Building Theory" considers that M&As are executed by managers who maximize their own utility instead of their shareholders value and the "Raider Theory", that managers

creating wealth transfers from the stockholders of the companies they bid for. Finally, according to the "Disturbance Theory", M&As are caused by economic disturbances (Trautwein, 1990).

Trautwein (1990) joins the above theories in a model that explains the motivation for M&As (see Table 1). Specifically, the first category includes theories according to which the decision on M&As stems from the interests of shareholders and managers. Motives for M&As are the expected profits of shareholders, which are net gains through synergies and private information or wealth transfers from a target's shareholders or from customers. All theories included in the first category of the model, focus on the consequences of M&As as motives for their planning and execution. Instead, the process theory (second category of the model) view M&As as process outcomes, while the disturbance theory (third category of the model) as macroeconomics phenomena.

Table 1: Theories of mergers motive

<table>
<tr><td rowspan="5">M&As as rational choice</td><td rowspan="4">M&As benefits bidder's shareholders</td><td>Net gains through synergies</td><td>Efficiency theory</td></tr>
<tr><td>Wealth transfers from costumers</td><td>Monopoly theory</td></tr>
<tr><td>Wealth transfers from target's shareholders</td><td>Raider theory</td></tr>
<tr><td>Net gains through private information</td><td>Valuation theory</td></tr>
<tr><td>M&As benefits managers</td><td colspan="2">Empire – Building theory</td></tr>
<tr><td colspan="3">M&As as process outcome</td><td>Process theory</td></tr>
<tr><td colspan="3">M&As as macroeconomic phenomenon</td><td>Disturbance theory</td></tr>
</table>

Source: Trautwein (1990), p. 284

Based on the above, companies can make a decision for M&A motivated by the expected consequences of this process or influenced by other external factors.

On the other hand, according to Al-dmour & Al-Qaisi (2016), the motives for M&A can be explained by two groups of theories, namely neoclassical theories and behavioral theories. The first includes theories according to which the M&A is a rational decision taken by managers and has as main objective to maximize the shareholder wealth. In this sense, all the consequences of various external factors such as economic instability, technological developments, legal regulation of the industry will lead to a reaction of companies as redistribution of assets through M&As. Conversely, behavioral theories support that the M&A decision is not rational, as firms' managers do not act in the interest of shareholders but in order to cover their own interests without aiming at increase the value of the company. Consequently, the view of Al-dmour & Al-Qaisi (2016) lead to that motives for M&As reflect the interests of shareholders or the interests of managers.

Other researchers (DeYoung & Evanoff, 2009; Ferris & Graddy, 2007) refer to profit and non-profit motives for M&As. Examples of profit motives are the profit maximization, geographic and product diversification, as well as the increasing the size of the company. Non – profit motives refer to that managers may engage in M&As in order to maximize their own utility at the expense of shareholders (DeYoung & Evanoff, 2009).

Moreover, Smirnova (2014) state that motives for M&As can be grouped into internal and external motives. This view is based on the Self-Determination Theory (Deci & Ryan, 1985), which considers that people are actively looking for challenges and new experiences and are motivated to perform actions by two factors: internal and external (Smirnova, 2014). Internal motives refers to the involvement of individuals in activities for personal reasons that is to say the feelings of pleasure and satisfaction which result directly from the participation (Smirnova, 2014). External motives are factors or forces (eg. rewards, punishments, obligations) from which individuals are affected and consistently behave in a certain way (Smirnova, 2014).

The views presented above are revealed through the results of various research studies. For example, according to Coyle (2000) the most important motive for M&A is the exploitation of economic opportunities which guarantee revenue growth. Other reasons for M&As reported by Cigola & Modesti (2002) is the opportunity for market expansion and acquiring of R&D capability to develop new products and services.

Several researchers underline different motivations for M&As such as business differentiation (Stahl & Mendenhall, 2005), profit growth (Huang & Kleiner, 2004), survival in periods characterized by adverse economic conditions, better access to raw materials, but also tax benefits and economies of scale (Paulter, 2001).

However, it is argued that mergers and acquisitions in the banking sector stem from different motivations in comparison with other economic sectors (Focarelli et al., 2002; Humphrey & Vale, 2003). Indicatively, according to Focarelli et al. (2002) banks merge in order to increase their income due to market expansion, while the main objective of acquisitions in banking sector is the improvement of the quality of portfolio of acquired banks in order to increase its profitability. Sufian (2011) argues that banking organizations make M&As in order to achieve economies of scales and thus to improve their effectiveness. Sufian (2011), however, also refers to the economies of scope, which are a key motives for banks that are mainly large in size. Morris (2004), point out that the changing market conditions and economy of a countries are the most important motivation for M&As in the banking sector.

Also, from the review of the existing literature, it has been found that banks' motives for M&As often vary according to the country. Indicatively, according to Pasiouras & Zopounidis (2008), banks in Greece choose to be involved in merges and acquisitions because have as main objective, the expansion, but also the economies of scale to enhance their market position. Larger banks acquire the smallest in order to increase their power as well as to be facilitated their access to the capital markets. The above may be directly linked to the difficult financial situation in Greece that pushes banks into such strategies. On the other hand, Morris (2004), focused on banks in the United States and concludes that the main reason for mergers and acquisitions is to be increased the power of banking organizations. Moreover, Focarelli et al. (2002) argue that the main motivation for M&As of Italian banks is to increase their income and to achieve greater profitability. On the other hand, according to Shanmugam (2003), the reasons for M&As in the banking sector of Malaysia are the achievement of greater efficiency and competitiveness. Smirnova (2014) states that the internal motives for M&As, are the desire for growing, increasing income, strengthening position, market expansion and differentiation of services, while the external motives arising from the specific political - economic conditions of a country, the obtaining tax benefits, the government policies, the responding to changing economic conditions.

Table 2: Summary of Literature Review: M&A Motives in the Banking Sector

Reference (year)	Period	Sample size	Motive	Regional focus	Results
Focarelli et al. (2002)	1985-1996	135 mergers & 66 acquisitions	Achieving high profitability	Italia	The main motive for mergers is the market expansion in order to get higher income. In acquisitions, the motive is the improving of the passive bank's loan portfolio in order to increase its profitability.
Sufian (2011)	1999-2010	241	Improvement of efficiency	Korea	Major motives for M&As is the improvement of efficiency (Humphrey & Vale, 2003) mainly through economies of scope and less trough economies of scale.
Morris (2004)	1983-2001	198	Improvement of efficiency	USA	The main motive is to respond to the changing economic conditions trough improving the effectiveness of providing financial services
Pasiouras & Zopounidis (2008)	1998-2002	24	Growing & Strengthening position	Greece	The main motive of banks is the strengthening their position in the market in order to get easier access to international money and capital markets.
Shanmugam & Nair (2003)	1997-2003	10	Achievement of efficiency and competitiveness	Malaysia	The main motive of M&As in banking sector is the reduction of banking services costs, as well as the increase of efficiency and competition.
Smirnova (2014)	1991-2010	14	Internal and External motives	Kazakhstan	Some M&A in banking sector are driven by internal motives such as growing, expanding in CIS countries, increasing income, strengthening position, market expansion and differentiation of services. Others, are prompted by external economic, legal-political, technological, and competitive factors.
Bliss & Rosen (2001)	1986–1995	32	Utility maximization	USA	The main motive for M&A is the CEOs compensation. Compensation generally increases even if mergers cause the acquiring bank's stock price to decline.
Rine & Stiroch (2003)	1996-1999	289	Product diversification	Switzerland	The main motive is the expansion to other financial sectors, which, however do not lead to economic scale.
Hayden et al. (2006)	1996-2002	983	Product diversification	Switzerland	Unprofitable results from the expansion of banks' activities, which is the main motivation for M&A.

Geographical and product differentiation is an important motive for M&As in the banking sector, although they often do not lead to the desired outcome. Indicatively in the research conducted by Rine & Stiroch (2003), as well as by Hayden et al. (2006), it was appeared that the most important motive for banks M&As is the expansion to other financial sectors. However, the results were unprofitable since gain and economies scales were not observed.

Other researchers refer to non – profit motives such as utility maximization. For example Bliss & Rosen (2001) based on their research concluded that CEOs make an acquisition in order to take large compensation from the increased size of the bank.

2.4 Determinants of Merger and Acquisition success

There are specific factors that determine the likelihood of a bank being involved in a merger or acquisition process. More specifically, according to the model of Akhigbe et al. (2004), the probability of a bank becoming a target for acquisition is greater for banks that have a higher capital level, lower return on assets, higher run-up in price, more non-performing loans, lower market-to-book multiple, higher loan concentration and higher core deposit ratio. Hernando et al. (2009) add that the target bank, usually has higher cost to income, lower profitability and capitalization and lower growth prospects. In the case of cross - border M&As, the target bank is usually large, low - performing and is operated in a small country, in a highly concentrated sector (Correa, 2009). On the other hand, bidder bank is usually larger in size, with high efficiency and effectiveness, high growth rate, more profitable and less liquid (Beccalli & Frantz, 2013).

The key issue however, is to be identified the factors that determine whether the merger and the acquisition is successful. Before proceeding with the analysis, it is necessary to give a definition of the term "success". Considering that M&As are investments, then success can be determined using the net present value method (NPV). This means that M&As are considered to be successful if they lead to the least such profit for companies, than any other similar risky investment. In other words, the net present value should be less than or equal to zero (Manitou, 2016).

There are various theoretical approaches that can be used to explain the determinants of mergers and acquisitions success. More specifically, Beccalli & Frantz

(2010), refers to the "traditional" and "organizational" approaches. The first approach considers merger and acquisition as a strategic decision or as a financing process. On the other hand, the second approach focuses on the human issue as part of M&As. In this sense, based on the traditional approach, financial performance is the measure of M&As success or in other words the main goal of the process is to be maximized the shareholders' wealth, as well as to be achieved effective partnerships, economies of scale, knowledge transfer and effective control (Cartwright & Cooper, 1993).

In fact, however, a lot of M&As are failing rather than leading to increased productivity and profitability. This is often due to the fact that, although M&As are strategic processes with specific requirements, decision makers are subject to personal feelings and aspirations that tend to override rational thinking and neglect organizational consequences. This is directly related to the second theoretical approach, the organizational, according to which compatibility among participants in an M&As is critical to its success. Compatibility is considered in relation to organization culture, management systems, process management, decision making and communication models (Cartwright & Cooper, 1993).

Cultural issues play an important role in the organizational approach of M&As. One of the most important factors that cause problems in mergers and acquisitions is the differences in corporate culture. Thus, the more similarities in the corporate culture the organizations involved in the M&A process, the higher the likelihood of success (Cartwright & Cooper, 1993).

Heidrich (2002) demonstrated an integrated cultural change model which tried to focus on both internal and external factors that could have influence on cultural changes in organizations during the M&As process (see Figure 1). Specifically, Heidrich (2002) focuses on the need to change the organizational culture of companies involved in M&As. The M&As success depend on the extent to which the culture will be changed effectively. This depends on six categories of factors, namely: 1) changes in leadership style; 2) changes in attitudes and perceptions of members of the organization; 3) characteristics of the organization; 4) changes in national culture, 5) changes in strategy and structure; and 6) characteristics of the culture (see Figure 1).

Figure 1: The model of culture change

Source: Heidrich (2002)

The problem with the traditional approach of mergers and acquisitions is that it consider them only as economic and strategic alliances, ignoring an important influence of the human factor. To consider mergers and acquisitions exclusively as reasonable economic and strategic activities and not as human activities is very likely to be incomplete process. In this sense, all decisions related to M&As include both logical and emotional elements. The logical element concerns the technical content of the decision, based on the available knowledge of economic and strategic factors, while the emotional aspect concerns the emotional behavior of decision - makers, which is influenced by cultural factors and the organizational quality of the decision (Cartwright & Cooper, 1993).

On the other hand, with regard to the factors determining the success of M&As in the banking sector, Beitel (2002, citied in Kolaric & Schiereck, 2014) divides them into three categories. The first includes the characteristics of the acquirer and target company, the second the transaction specific factors, and the third the environmental factors.

Combining the traditional and organizational approach of Beccalli & Frantz (2010) with the three categories of Beitel (2002) and the model of culture change of Heidrich (2002), it is proposed that the grouping of M&As success factors could be based on the model showed in the Figure 2.

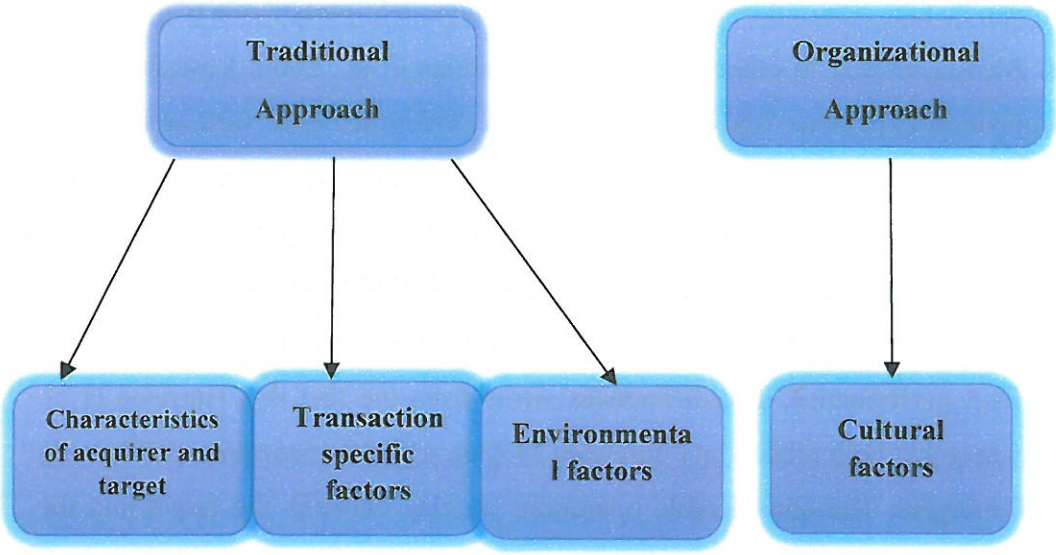


Figure 2: Model for determinants of Merger and Acquisition success

Source: Adjustment from Beccalli & Frantz (2010); Beitel (2002); Heidrich (2002)

In detail, the characteristics of the acquirer and the target company, the transaction specific factors and the environmental factors are considered in the light of the traditional approach for the M&As success. Through the organizational approach, the cultural factors of success with an emphasis on the organizational culture are examined. Subsequently, in the table 3, the results of research studies on the success factors of M&As are grouped on the basis of the adapted model presented in Figure 3.

Characteristics of acquirer and target: The results of studies that focus on the impact of company's size on M&A success diverge. Some researchers argue that when acquirer and target have the same size, M&As success is higher (Ahuja & Katila, 2001; Krishanan et al., 2007). This is linked to the fact that when both sides have similar or the same size, the acquirer recognizes and integrates more easily the target company's knowledge, skills, systems and procedures. However, other studies have concluded that in order to be successful the M&As, the acquirer should be a company larger than the target company (Bruton et al., 1994, Homberg et al., 2009; Gupta & Misra, 2007). In line with other findings (Seth, 1990; Tuch & O'Sullivan, 2007), the smallest size of the acquirer than that of the target company can successfully influence M&As, because the process increases its power and ability to explore economies of scale and scope. Zollo et al. (2000) find that the size of the acquirer has a significantly negative impact on the acquirer's M&A success. In another study (Cybo-Ottone & Murgia, 2000), however, it

is not proven that the size of the acquirer and target plays an important role in the M&As success. Also according to other researchers (Haleblian et al., 2006; Epstein, 2005), prior acquisition experience and recent acquisition performance, as well as the pre - merger planning affect positively the M&As success. Moreover, Ramaswamy (1997) states that mergers between a target and an acquiring company with similar strategic characteristics lead to higher performance. Harrison et al. (1991) disagree with the view of Ramaswamy (1997) finding that exactly the lack of similarities is positively related to post M&A performance. The differences stems from the fact that Harrison et al. (1991) investigated both related and unrelated M&As, while Ramaswamy (1997) only horizontal mergers. The considerable operations overlap between the target and the bidder company are very important because affect the M&As success (Houston & Ryngaert, 1994). Also, high target bank growth rates is associated with better M&A performance (Lorenz et al., 2006). Other researchers however disagree with this opinion (Hernando et al., 2009; Beccalli & Frantz, 2013) supporting that high growth rate of bidder bank is the more important factor for M&As success. Finally, M&As are more successful when the bidder bank is more profitable than the target (Banerjee & Cooperman, 2000).

Transaction specific factors: Initially, in terms to this category, the influence of geographic/ product focus versus geographic/ product diversification on the M&As performance is examined. Some evidence (Lapetit et al., 2004) showed that cross-product diversification and geographic specialization have a positive effect on M&As performance. On the other hand, Ismail & Davidson (2005) concluded that geographic diversification is more effective than geographic focus strategy. Also, according to Becher & Campbell (2005) product and geographic focus can lead to better results for the acquiring bank. Similarly, Cornett et al. (2000) concludes that the productivity focus has a significantly positive impact on the value creation of M&As. The financing method of transaction is also important. Transactions that are paid with cash are associated with higher performance of M&As (Tuch & O'Sullivan, 2007). However, similar results there is also for the combination of cash and stock payments (Ismail & Davidson, 2005). Other evidences (Gupta & Misra, 2007), showed that the use of only stock payments affects negatively the M&As performance.

Table 3: Determinants of Merger and Acquisition success

Approach	Category of determinants	Determinants	Effect
Traditional	Characteristics of acquirer and target	• Same size of acquirer and target • Acquirer larger than target • Target larger than acquirer • Size of target and acquirer • Prior acquisition experience/ recent acquisition performance • Pre - merger planning • Similar strategic characteristics • High overlap of operations • High growth rates of target • High growth rates of acquirer • High profitability of acquirer	• Positive/ Negative • Positive/ Negative • Positive • No effect • Positive • Positive • Positive/ Negative • Positive • Positive • Positive • Positive
	Transaction specific factors	• Geographic focus • Geographic diversification • Product focus • Product diversification • Cash only payment • Combination of stock and cash • Stock only payment	• Positive/ Negative • Positive/ Negative • Positive/ Negative • Positive/ Negative • Positive • Positive • Negative
	Environmental factors	• Deregulation • Higher government efficiency	• Positive/ Negative • Positive
Organizational	Cultural factors	• National cultural distance • Informal control	• Negative • Positive

Environmental factors: The effect of deregulation on bank M&As success is a much discussed topic. For example according to Hagendorff et al. (2007) after the bank deregulation, M&As increased and are more effective. However, Becher & Campbell (2005), state that deregulation has negative results for acquirers. Also higher government efficiency is associated with higher M&As performance (Kiymaz 2004; Buch & DeLong, 2004).

Cultural factors: The majority of the empirical researches provide evidence that the greater the national cultural distance between two countries, the greater the likelihood of failing performances of M&As (Teerikangas &Very, 2006). According to evidences (Calori et al., 1994; Child et al., 2002) the national culture of the acquiring companies which is based on the informal control and generally on the adaptive approach improve the performance of their foreign acquisitions.

2.5 Methodologies used to determine Mergers and Acquisitions success efficiency

M&A research in banking, in general, applies three different approaches: event studies, dynamic efficiency studies, or performance studies (Kolaric & Schiereck, 2014). However most researchers use event study methodology in order to estimate the reaction of the market price of the banks around the announcement date. In general, the event study consider the only methodology, which directly allows judging on the value implications of a bank M&A (Pilloff & Santomero, 1998).

On the other hand, according to the efficiency studies, M&As are successful when the effectiveness of the resulting organization is closer to the efficient frontier, which is usually, the most efficient organization of the sample. In performance studies, the M&As success is evaluated based on the accounting ratios of resulting organization (Kolaric & Schiereck, 2014).

2.5.1 Event studies

The method of event study was first applied in the empirical study of Fama et al. (1969, citied in Kolaric & Schiereck, 2014, p. 41). The stock returns surrounding the announcement day are investigated, since the M&A is considered to be successful if it leads to an increase in the share price for both target and acquiring company (Kolaric & Schiereck, 2014). A change in shareholder value, or an abnormal return, is generated

if investors receive a stock return in excess of the expected one. The overall result is usually the target company to earn positive abnormal returns, while the bidding company to win negative or insignificant returns (Shah & Arora, 2014). This is explained by the fact that the target company is expected to perform better after their integration into more efficient company. This is expected to lead to a worse performance of the bidding company after merging with a weaker company, because the bidder invest money in the new institution, which finally affects its shareholders' earnings and dividends (Shah & Arora, 2014). However, as will be seen below, the situation presented above is not always true as the whole process of M&A is affected by a variety of factors.

The calculation of the expected return usually follows one of the three basic models: (1) the market and risk adjusted return model, or short market model, (2) the mean adjusted return model, and (3) the market adjusted return model (Bühner 1990, citied in Kolaric & Schiereck, 2014, p. 41).

Below follows a literature review of research studies which evaluate the results of M&As with the method of the event study. The results are presented in Table 4.

In detail, Tsangarakis et al. (2013) shows that in the European financial industry, acquirers experience statistically insignificant abnormal returns. However, according to this study, the larger the deal, the higher returns significantly. On the other hand, Chronopoulos et al. (2013) state that European acquiring banks involved in US deals experience positive and statistically significant abnormal return in compare with the US acquiring banks. Similarly, Hagendorff et al. (2008), concluded that acquiring banks in US realize negative abnormal return, while the European acquiring banks, positive and statistically significant abnormal return. Higher returns are accosted with targeting in low protection economies, which are the most European economies, while negative abnormal return with targeting in high investor protection regime, such as the regime of US.

According to Teply & Stárov (2008), during the financial crisis, the stock returns for acquirer banks around the M&A announcement date are insignificant. However, Beltratti & Palladino (2011) disagree with this opinion, supporting that acquirer bank during the period of economic disturbances, have positive abnormal returns at the completions of the M&A. Beltratti & Palladino (2011) state that this difference in abnormal returns is due to information asymmetry, which is related to opaqueness of target assets and the uncertainty during the crisis.

Table 4: Summary of Literature Review about abnormal returns for European and international event studies

Reference (year)	Period	Sample size	Region	Results
Tsangarakis et al. (2013)	2000-2006	172	Europe	Strong positive effects for targets that become higher in cross-border and small value deals. Acquirers experience statistically negative insignificant abnormal returns. The significance I higher for large deals.
Chronopoulos et al. (2013)	1997-2003	135	Europe & US	European acquiring banks involved in US deals experience positive and statistically significant abnormal return. For target banks regional differences are less important.
Hagendorff et al. (2008)	1998-2006	146	Europe & US	Acquiring banks in US realize negative abnormal return, while the European acquiring banks, positive and statistically significant abnormal return
Beltratti & Palladino (2011)	2007-2010	116	Europe	Acquirer bank during the period of economic disturbances, have positive abnormal returns at the completions of the M&A
Campa & Hernando (2006)	1998-2002	172	Europe	European targets have large, positive, and statistically significant abnormal returns. There are not returns to shareholders of the acquiring banks.
Goddard et al., 2012	1998-2008	132	Asia & Latin America	On average M&A creates shareholder value for target firms, while acquirer firms do not lose shareholder value.
Scholtens & deWit (2004).	1990-2000	20/17 (acquirers/ targets)	Europe & US	European bank targets earn lower abnormal returns than the US bank targets

Finally, based on different evidences (DeLong, 2003; Hagendorff et al., 2008; Campa & Hernando, 2006; Tsangarakis et al., 2013) European targets on average obtain large, positive, and statistically significant abnormal returns. The same results are also observed in Asia and Latin America (Goddard et al., 2012). However, Scholtens & deWit (2004), concluded that European bank targets earn lower abnormal returns than the US bank targets.

2.5.2 Dynamic efficiency and performance studies

Both dynamic efficiency studies and the performance studies use various accounting data to evaluate the merger and acquisition results. The key advantage of these two methods is that they offer the opportunity for profit forecast of a possible M&A. In detail, in dynamic efficiency studies, accounting data are used to calculate costs and profits both before and after M&A. On the other hand, in performance studies, accounting indices are calculated and reviewed after M&A, in order to be revealed possible improvements (Kolaric & Schiereck, 2014).

Most dynamic efficiency studies focus on examining the cost-benefit relationship. Several studies (Al-Sharkas et al., 2008; Kathuria, 2015) conclude that mergers lead to better cost efficiency and higher profits. Al-Sharkas et al. (2008), as well as Altubans et al. (2001) report that a combined entity as a result of mergers has significant cost improvements (see table 5).

A number of performance studies examine the operating performance of the acquiring firms reporting mixed results. Healy, Palepu & Ruback (1992) observe increases in the post-merger cash flow operating performance of merged firms in US. Heron & Lie (2002) report evidence of operating performance improvements using a more comprehensive sample of US deals, while Powell & Stark (2005) show evidence of operating performance improvements following UK M&A deals (see table 5).

In contrast, however, no significant operating performance improvements are found by Ghosh (2001) for US acquirers and Sharma & Ho (2002) for Australian acquirers. According to Vander Vennet (1996) the European acquisitions do not lead to performance improvements. However, in case of mergers between organizations of similar size, there is significant performance improvements for the combined entity (see table 5).

Table 5: Summary of Literature Review about abnormal returns for Dynamic efficiency and performance studies

Reference (year)	Period	Sample size	Region	Results
Al-Sharkas et al. (2008)	1985-1999	440	US	Mergers lead to better cost efficiency and higher profits
Kathuria (2015)	2003-2012	684	US	Mergers lead to better cost efficiency and higher profits
Altubans et al. (2001)	1989-1997	7626	US	Mergers lead to significant cost improvements.
Healy, Palepu & Ruback (1992)	1979-1984	50	US	Merged firms show significant improvements in asset productivity, leading to higher operating cash flow returns.
Heron & Lie (2002)	1998-1997	859	US	Acquirers exhibit operating performance improvements
Ghosh (2001)	1992-1999	845	US	No significant operating performance improvements as a result of M&A
Sharma & Ho (2002)	1986-1991	36	Australia	Corporate acquisitions do not lead to significant improvements in post-acquisition operating performance
Vander Vennet (1996)	1988-1993	492	Europa	Mergers between organizations of similar size, lead to significant performance improvements

From the above, we can conclude that the method of the event studies is used in order to be evaluated the effects of M&As and whether it is profitable or not. The importance of this method is revealed by the fact that it provide important information on the value of the share capital. However, this method does not provide in-depth information about the sources of profit. Efficiency and performance studies on the other are used to estimate profits from an M&A as a function of cost-effectiveness. Their key advantage is that they reveal the sources of the profits and can be used for forecasts.

CHAPTER 3: DATA AND METHODOLOGY

3.1 Data

The purpose of the thesis is to study the stock price reaction due to merger and acquisition (M&A) announcement both target and acquiring banks in Europe for the period 1997-2016. The analysis was based on a sample consist of European banks (targets and acquirers) involved in M&A deals which are announced in the period January 1997 – June 2016. The data for the bank mergers and acquisitions was collected from the Thomson Reuters Eikon database. The criteria for the sample are as following:

1. M&A transactions
2. Both acquirers and targets are in Europe
3. Both acquirers and targets are in the banking sector
4. The transactions are announced between 1997 and 2016
5. Both acquirers and targets are publicly listed
6. The M&A deals are completed
7. The acquirer owns a minimum of 51% of shares after the acquisition

Based on the above criteria and using daily data, the initial sample included 293 M&A deals. After this, using Thomson Reuters Eikon database, the DS Mnemonic codes for the banks were found. These are needed for the next step which is the collecting the data for the returns of the banks, the prices of the EURO STOXX BANKS E Index as well as the accounting data from the DataStream base.

From the total of 293 M&A deals, Acquisitions of Partial Interest (N = 107), Acquisitions of Remaining Interest (N = 45), as well as deals for which there was no information on the type of transaction (N = 5), were removed. So, the number of deals decreased to 136, which are only Mergers and Acquisition of Majority Assets (see Table 6).

Table 6: Summary M&A transactions (Full sample)

Year	Number of Deals (initial sample)	Acquisition of Partial Interest	Acquisition of Remaining Interest	No information	Mergers & Acquisition of Majority Assets
1997	17	8	2	0	7
1998	20	11	3	0	6
1999	55	29	6	4	16
2000	38	15	8	0	15
2001	20	4	3	0	13
2002	16	5	3	0	8
2003	8	1	4	0	3
2004	9	3	3	0	3
2005	10	6	1	0	3
2006	13	5	1	0	7
2007	13	6	3	0	4
2008	19	5	1	0	14
2009	5	1	0	0	4
2010	12	2	2	0	7
2011	1	0	0	0	1
2012	13	3	2	0	8
2013	11	0	2	0	9
2014	6	2	0	1	3
2015	2	1	1	0	0
2016	5	0	0	0	5
TOTAL	**293**	**107**	**45**	**5**	**136**

Then, we removed all the deals for which there were no DS Mnemonic codes or data on return price index, simultaneously for acquiring and target bank, resulting in 94 M&A deals (see Appendix).

Table 7: Summary M&A transactions (end sample)

Number of Deals (Mergers & Acquisition of Majority Assets)	No Mnemonics, RI data & duplicated values	End usable M&A deals
136	42	94

The final sample consists of 84 transactions of acquiring banks and 52 transactions of target banks spread over the period January 1997 to June 2016. In Table 8 we provide summary statistics for the total sample of 94 deals, which were evenly distributed between 44 mergers and 50 acquisitions of which 60 are national and 34 cross-border transactions.

Table 8: Sample statistics for total of M&As deals (End sample)

Year	Number of Deals	Mergers	Acquisition	National	Cross – border
1997	1	1	0	1	0
1998	1	0	1	1	0
1999	13	4	9	7	6
2000	9	3	6	5	4
2001	8	2	6	4	4
2002	5	2	3	2	3
2003	2	0	2	2	0
2004	3	1	2	1	2
2005	2	1	1	1	1
2006	5	3	2	0	5
2007	2	1	1	2	0
2008	9	5	4	6	3
2009	4	2	2	3	1
2010	7	3	4	3	4
2011	1	1	0	1	0
2012	8	7	1	8	0
2013	9	6	3	9	0
2014	3	2	1	3	0
2015	0	0	0	0	0
2016	2	0	2	1	1
TOTAL	94	44	50	60	34

Table 9: Partition of acquiring and target banks deals by country

Location	Acquirers		Targets	
	Number of transactions	% of the Total	Number of transactions	% of Total
Austria	2	2.4%	0	0.0%
Bosnia and Herzegovina	0	0.0%	0	0.0%
Bulgaria	1	1.2%	1	1.9%
Croatia	0	0.0%	0	0.0%
Cyprus	1	1.2%	0	0.0%
Czechia	0	0.0%	1	1.9%
Denmark	14	16.7%	11	21.2%
Estonia	0	0.0%	0	0.0%
Finland	0	0.0%	0	0.0%
France	5	6.0%	3	5.8%
Georgia	0	0.0%	0	0.0%
Germany	5	6.0%	1	1.9%
Greece	7	8.3%	6	11.5%
Ireland	1	1.2%	0	0.0%
Italy	11	13.1%	7	13.5%
Kazakhstan	2	2.4%	3	5.8%
Latvia	0	0.0%	1	1.9%
Lithuania	1	1.2%	0	0.0%
Macedonia	0	0.0%	0	0.0%
Poland	6	7.1%	7	13.5%
Portugal	3	3.6%	3	5.8%
Romania	0	0.0%	0	0.0%
Slovakia	0	0.0%	0	0.0%
Slovenia	0	0.0%	0	0.0%
Spain	14	16.7%	5	9.6%
Sweden	7	8.3%	0	0.0%
Switzerland	1	1.2%	1	1.9%
United Kingdom	3	3.6%	2	3.8%
Total	84	100.0%	52	100.0%

In the Table 9 we report the geographical distribution of the deals in our sample and notice that Denmark, Spain and Italy are at the top of the league.

As can be seen from the data presented in Figure 3, most of the transactions from acquirers held by banks operating in Denmark (16.7%), Spain (16.7%) and Italy (13.1%), followed by Greece (8.3%), Sweden (8.3%), Poland (7.1%), France (6.0%)

and Germany (6.0%). Few are the acquiring banks in Bulgaria, Cyprus, Ireland, Lithuania, Switzerland, Austria, Kazakhstan, Portugal and UK.

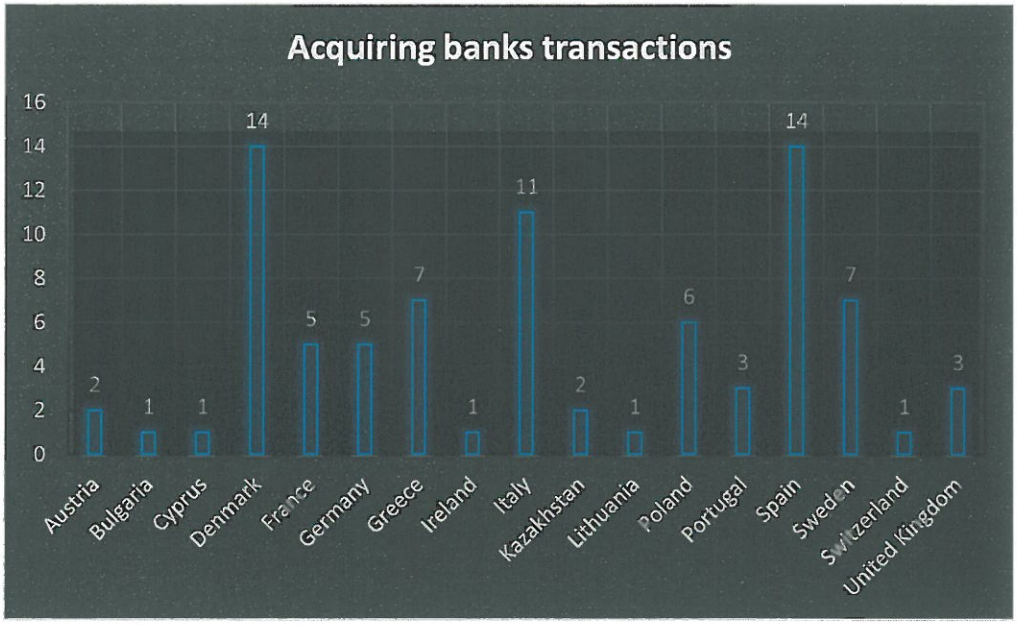


Figure 3: Acquiring banks transactions by country

The most target banks are in Denmark (21.2%), Poland (13.5%) and Italy (13.5%), followed by Greece (11.5%) and Spain (9.6%). On the other hands, banks operating in Bulgaria, Czechia, Germany, Latvia, Switzerland, UK, Portugal, Kazakhstan and France are minimally involved as targets in M&A transactions (see Figure 4).

Figure 4: Target banks transactions by country

3.2 Methodology

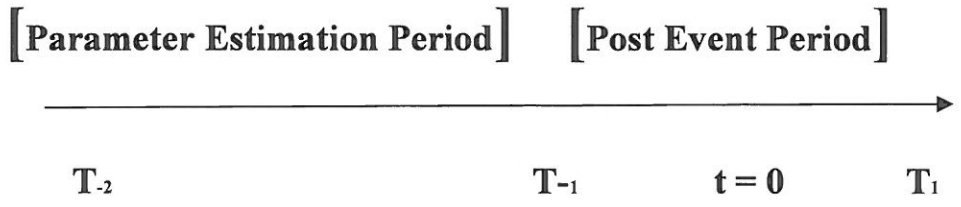
3.2.1 Event study

Assuming an efficient market in a weak form (Fama & French, 1970), the information of the event (M&A) was interpreted by the stock price. Thus, the stock price of the banks were used as an indicator in order to be revealed the market reacts to the announcement of M&A event. The normal and abnormal returns are derived from the stock prices, using certain models. In actual fact, it is often the case that the stock price does not immediately change. This happens for example when there is no information for the transaction before the official public announcement date. Therefore, in order to be revealed the reaction of the stock prices of the banks to the M&A announcement, an event study methodology was used. The following structure was applied:

1. Determination of the event date.
2. Determination of the event window.
3. Determination of the estimation period.
4. Calculation of the normal returns.
5. Calculation of the abnormal returns (ARs).
6. Calculation of the cumulative abnormal returns (CARs) - AARs and CAARs.
7. Determination of the statistical significance of CARs.

In detail, the *event date* is the date on which the event happens. For the present study, this is the announcement date of the M&As deals and is defined as $t = 0$. On this date, the effect of the event is measured by the stock prices of the banks. The second step was the determination of the *event window*. This is defined by the number of days preceding and following the event date. For the present study a 10 days event window for the forecast period (post event period) was defined. On the other hand, the *estimation period* is the period in which no event has occurred and its aim is to determine the normal behavior of stock returns or in other words how the returns behave in the absence of the event. From the three time frame options for the estimation period,

which is before, during and after the event window, for the present study, the before event period was chosen, because is the most common one. Thus, the interval between 120 and 15 negotiable days before the announcement of the transaction was defined as a parameter estimation period.



The main purpose in an event study is to be calculated *abnormal returns* due to an event. This requires the subtracting of the normal from the actual return. Consequently, the model for normal returns needs to be determined first. *Normal returns* are the stock returns that would have occurred in normal circumstances or in other words in the absence of the event. There are different models for calculating the normal return of a stock. For the present study, the "Market adjusted returns model" was used. This model and other which are widely used are presented in the next section.

3.2.2 Event study benchmarks

Market Adjusted Returns Model

The abnormal return is calculated using the difference between the actual and expected returns of the firms and can be calculated by:

$$AR_{jt} = R_{jt} - E(R_{jt})$$

where,

Rjt is the actual return and E(Rjt) is the expected or normal return (Duso, Gugler & Yurtoglu, 2010, citied in Shah & Arora, 2014). In the present study, the Market adjusted returns model was used. In this model, abnormal returns on each day in the event window are calculated by:

$$AR_{jt} = R_{jt} - R_{mt}$$

where,

AR_{jt} is the abnormal return on the stock j, on day t.

R_{jt} is the return on a particular equity stock j, on particular day t.

R_{mt} is the average return on the market index that is assumed to be constant over the event window.

In the present study, we removed the EURO STOXX BANKS E index returns from the daily returns of the shares in the sample for the period covering 120 days before and 15 days after the announcement of the mergers and acquisitions.

The analysis is improved by calculating the Average Abnormal Return (AAR) for each day in the event window. This aggregates the abnormal returns for all firms to find the average abnormal return at each time t. AAR is obtained by the equation below:

$$AAR_t = \frac{\sum_{j=1}^{N} AR_{jt}}{N}$$

where,

t corresponds to transaction days that are associated with the date of the event.

N is the sample size.

Finally, the average abnormal returns over the amount of days in the event window, T, (i.e. over all times t) are accumulated in order to form the:

$$CAAR_{T_1,T_2} = \frac{1}{N}\sum_{j=1}^{N}\sum_{t=T1}^{T2} A_{jt}$$

where,

A_{jt} is the abnormal return on the stock j, on day t.

N is the sample size.

The CAAR is a useful statistical analysis in addition to the AAR because it represents the average total effect of the event across all firms over multiple time windows.

Comparison Period Mean Adjusted Model

According to the comparison period mean model the expected returns vary between companies but is stable over the time. In this model the abnormal return in the event window is the return of the stock company j on day t minus the average return of the stock in the estimation window:

$$A_{jt} = R_{jt} - \overline{R_j}$$

Market Model

The market model assumes that the expected return of any given stock is linearly related with the market return. In other words stock returns follow a single factor market model (e.g. market index) represented by the following equation:

$$R_{jt} = \alpha_j + \beta_j R_{mt} + c_{jt}$$

where,

R_{jt} is the rate of return of the common stock of the j firm on day t.

R_{mt} is the rate of return of a market index on day t.

c_{jt} is the error term (a random variable) with expectation zero and finite variance. It is assumed that c_{it} is uncorrelated to the market return R_{mt} and firm return R_{jt} with $k \neq j$, not autocorrelated, and homoscedastic. The regression coefficient β_j is a measure of the sensitivity of R_{jt} to the market index (De Long, 2001). The abnormal return for the common stock of j firm on day t is calculated as follows:

$$A_{jt} = R_{jt} - (\hat{a}_j + \hat{\beta}_j R_{mt})$$

where, the coefficient a_j and b_j are ordinary least squares estimates of parameters.

Market Model with Scholes – Williams beta estimation

The Scholes – Williams model is also used for the assessment of market parameters. In detail, Scholes & Williams (1977) have shown that beta estimates are biased downward for securities trading infrequently and beta estimates upward for securities trading very frequently. To correct the intervalling – effect bias, Scholes & Williams (1977) proposed a consistent estimator of beta given by the following equation:

$$\hat{\beta}^{*}_{j} = \frac{\hat{\beta}^{-}_{j} + \hat{\beta}_{j} + \hat{\beta}^{+}_{j}}{1 + 2\hat{p}_{m}}$$

where,

$\hat{\beta}^{-}_{j}$ is the OLS estimate from the simple linear regression of R_{jt} on R_{mt-1}.

$\hat{\beta}^{+}_{j}$ is the OLS estimate from the simple linear regression of R_{jt} on R_{mt+1}.

$\hat{p}_{m}$ is the estimated first – order autocorrelation of R_{m}.

As in OLS, the intercept estimator forces the estimated regression line through the sample mean:

$$\hat{a}^{*}_{j} = \overline{R_{jEst}} - \hat{\beta}^{*}\,\overline{R_{mEst}}$$

where,

$\overline{R_{jEst}}$ is the mean return of stock j over the estimation the period.

$\overline{R_{mEst}}$ is the mean market return over the station period.

Market Model with GARCH or EGARCH estimation

In 1982, the model time-varying conditional variance with Auto Regressive Conditional Heteroskedasticity (ARCH) processes using lagged disturbances was developed. However, several evidences showed that a high ARCH order is needed to capture the dynamic behaviour of conditional variance. The Generalized ARCH (GARCH) fulfills this requirement as it is based on an infinite ARCH specification

which reduces the number of estimated parameters from infinity to two. The GARCH models capture volatility clustering and leptokurtosis, but as their distribution is symmetric, they fail to model the leverage effect. To address this problem, many nonlinear extensions of GARCH have been proposed, such as the Exponential GARCH (EGARCH) model (Alberga, Shalita & Yosef, 2008). In detail, GARCH invokes a single factor market model with GARCH (1,1) errors, while the EGARCH option invokes exponential GARCH or EGARCH (1,1) errors (Nelson, 1990):

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt}$$

where,

εjt | Ψt-1 ~ (0, hjt) and Ψt-1 denotes all information available at time t-1. The conditional variance in the GARCH case is:

$$h_{jt} = \omega_j + \delta_j h_{jt-1} + y_j \varepsilon^2{}_{jt-1}$$

with $\omega j > 0$, $y_j > 0$, $\delta_j \geq 0$, and $y_j + \delta_j < 1$

In the EGARCH case:

$$\log h_{jt} = \omega_j + \delta_j \log h_{jt-1} + y_j \mid z_{jt-1} \mid + \phi_j z_{jt-1}$$

where,

$$z_{jt} = \varepsilon_{jt} / \sqrt{h_{jt}}$$

The parameters in the EGARCH case are estimated by maximum likelihood.

Fama – French three - factor model

The Fama - French Three - Factor is a model designed to describe stock returns through three factors which are (1) the market risk, (2) the outperformance of small versus big companies, and (3) the outperformance of high book market versus small book/market companies, adding size and value factors. The equation of the model is:

$$R_{jt} = a_j + \beta_j R_{mt} + s_j SMB_t + h_j HML_t + \varepsilon_{jt}$$

where,

Rjt is the rate of return of the common stock of the j firm on day t.

Rmt is the rate of return of market index on day t.

SMBt is the average return on small market – capitalization portfolios minus the average return on three large market – capitalization portfolios.

HMLt is the average return on two high book to market equity portfolios minus the average return on the two low book to market equity portfolios.

εjt is a random variable that, by construction, must have an expected value of zero and is assumed to be uncorrelated with Rmt, uncorrelated with Rkt for k≠j, not autocorrelated and homoscedastic.

The abnormal return for the common stock of the j firm on day t is calculated with the following equation:

$$A_{jt} = R_{jt} - (\hat{a}_j + \hat{\beta}_j R_{mt} + \hat{s}_j SMB_t + \hat{h}_j HML_t)$$

3.2.3 Event study test statistics

The last step of the event study methodology is to be determined the significance of the event. The null hypothesis of no abnormal returns within the event windows is tested. In the present study, the AARs and the CAARs for the two samples were tested.

A statistical test is used to evaluate on the chance of rejecting the null hypothesis of no effect at some specific significance levels. Past event studies have used different test statistics and significance tests to test the null hypothesis. These tests consist of the parametric and non-parametric tests. In order to use the first one correctly, three assumptions must be met: normal distribution, independence and homogeneity of the variances. The second one does not rely on these assumptions. It is suggested to use non-parametric tests instead of parametric tests when the deviations are large and so are preferable to parametric tests for abnormal returns. There are mainly two non-parametric tests, which are the rank test and the sign test. However, when the sample

size if large enough, the parametric test can be used since the abnormal returns converge to a normal distribution, which is known as the central limit theorem. The central limit theorem states that the distribution of a variable will approximate the standard normal distribution when the sample size (n) is sufficiently large. In practice, this is when $n \geq 30$, but even for $n \geq 20$, the approximation will be usually quite sufficient. Two statistical tests were used in the present study are presented below.

Time Series Deviation Test

The time-series standard deviation test uses the entire sample for variance estimation. According to this construction, the time-series dependence test does not consider unequal variances across observations. The estimated variance of AARt is:

$$\hat{\sigma}^2_{AAP} = \frac{\sum_{t=E_1}^{E_2} (AAR_t - \overline{AAR})^2}{M-2}$$

Where the market model parameters are estimated over the estimation period of M = E_2-E_1+1days and:

$$\overline{AAR} = \frac{\sum_{t=E_1}^{E_2} AAR_t}{M}$$

The portfolio test statistics for day t in event time is:

$$t = \frac{AAR_t}{\hat{\sigma}_{AAP}}$$

Assuming time series independence, the test statistic for $CAAR_{T1, T2}$ is:

$$t = \frac{CAAR_t}{(T_2 - T_1 + 1)^{\frac{1}{2}} \hat{\sigma}_{AAR}}$$

Cross Sectional Standard Deviation Test

A simple test for testing H0: AAR=0 is given by:

$$t = \frac{AAR_t}{\hat{\sigma}_{AARt} / \sqrt{N}}$$

where,

$$\hat{\sigma}^2_{AAR_t} = \frac{1}{N-1}\sum_{i-1}^{N}\left(A_{it} - \frac{1}{N}\sum_{j=1}^{N}A_{jt}\right)^2$$

The estimated variance of $CAAR_{T1,T2}$ is:

$$\hat{\sigma}^2_{CAAR_{T1,T2}} = \frac{1}{N-1}\sum_{i-1}^{N}\left(CAR_{i,T_1,T_2} - \frac{1}{N}\sum_{j=1}^{N}CAR_{j,T_1,T_2}\right)^2$$

The test statistics for $CAAR_{T1,T2}$ is:

$$t_{CAAR} = \frac{CAAR_{T1,T2}}{\hat{\sigma}_{CAAR_{T1,T_2}} / \sqrt{N}}$$

3.2.4 Cross – sectional analysis

Definition of explanatory variables

In order to be revealed the factors which affect the behavior of stock returns, a regression analysis using the least squares method (OLS) was performed. In other words, the relationship between stock price reactions and specific characteristics of the banks was explored.

The cumulative abnormal returns were defined as dependent variables, while the independent variables were different factors related both to transaction and to specific bank characteristics. These are presented in the table 10.

Table 10: Independent variables using in regression analysis

Independent variables	Type of scale	Description	Calculation
Return of Assets (ROA)	Continuous variable	ROA is used to analyze a bank's ability to generate profit from its assets. ROA measurements include all of a company's assets.	ROA = Net Income / Average Total Assets
Return on Equity (ROE)	Continuous variable	ROA is used to analyze a bank's profitability in relation to the book value of shareholder. It is a measure of how well a company uses investments to generate earnings growth.	ROE = Net Income/Shareholder's Equity
Earnings per Share (EPS)	Continuous variable	EPS is the portion of a bank's profit allocated to each outstanding share of common stock. It is an indicator of a bank's profitability	EPS = Net Income – Preferred dividend /Average numbers of shares outstanding
Book to Market ratio (B/M)	Continuous variable	The B/M is used to find the value of a bank by comparing the book value to market value. It reflects how many times book value investors are ready to pay for a share.	B/M = Book value/ Market value
Firm size	Continuous variable	Bank size is used to determine the profitability of M&As.	Size = ln (total assets)
Nation	Dummy variable	Nation is used to explain the variances of the banks' abnormal returns.	Dummy nation **1** = Acquirer and target are in the same country **0** = Acquirer and target are in different countries

The regression model presented in this study was defined according to the hypothesis of the linearity, independence, regularity and homogeneity. More specifically, the relationship between the dependent variable and the independent variables is on average linear. In addition, the dependent variable's observations are independent of each other, and for each combination of values of the independent variables, the normal distribution with zero mean and stable dispersion is followed.

The purpose of regression is to describe the straight-line relationship between variables. The most popular method of estimating the straight line is the least squares method, which was applied in the present study. According to this method, the criterion for good data adaption in the straight line equation is the minimization of the sum of square errors. The main equation was the following:

$$CAR = c + \beta_1 ROA + \beta_2 ROE + \beta_3 \mathrm{B/M} + \beta_4 SIZE + \beta_5 DNATIONAL + \varepsilon$$

CHAPTER 4: ANALYSIS OF RESULTS

4.1 Market Reaction to M&A Announcement

In the present thesis, the Market Adjusted Returns Model was used for the assessment of the stock market reaction to bank mergers and acquisitions in Europe. The estimation period was defined between 120 days before and 15 days after the event day, while the forecasting period, between 10 days before and 10 days after the announcement of the transaction. Different time windows were used. Time Series Deviation Test and Cross Sectional Standard Deviation Test were performed in order to control the hypothesis that the Average Abnormal Return (AAR) and the Cumulative Average Abnormal Return (CAAR) are equal to zero. Hypotheses were rejected at a significance level of 1%, 5% and 10%.

Table 11 shows the average abnormal returns (AAR) for acquiring banks for the [+10,-10] event period, as well as the prices for both time series deviation and cross sectional standard deviation tests. According to the literature, it is expected the acquiring banks to have negative or not significant abnormal returns. Indeed, it is observed that on the date of the M&A announcement (t = 0), the AAR for the acquiring banks is positive, but low (1.33%) and not statistically significant according to the two tests that were used. During the period before the announcement, investors seem to have absorbed the information about the forthcoming acquisition / merger because low, but positive returns are also observed, such as in [0,-1] and [-1,-2] event period, that is, one and two days before the announcement. However, one day after the announcement [0, +1], the AAR is negative (-0.42%), which is maintained until the day 9 after the announcement (-0.36%), with the exception of the day 2, when the AAR is positive, but very low AAR (0.08%). On the day 10 after the announcement, the average abnormal return of acquiring banks is positive (0.25%) but not significant with both tests.

Table 11: Average abnormal returns (AAR) for acquiring banks using Time Series Deviation Test and Cross Sectional Standard Deviation Test

Event day	Acquiring banks				
	N	Positive: Negative	AAR (%)	Tests	
				Time Series Deviation Test	Cross Sectional Standard Deviation Test
-10	83	46:37	**0.40%**	0.61	1.24
-9	81	44:37	**-0.40%**	-0.61	-0.91
-8	81	42:39	**-0.21%**	-0.32	-0.80
-7	81	43:41	**0.16%**	0.25	0.55
-6	83	36:47	**-0.39%**	-0.598	-1.59
-5	82	37:45	**0.19%**	0.29	0.85
-4	82	40:42	**-0.17%**	-0.26	-0.54
-3	83	41:42	**-0.33%**	-0.50	-0.74
-2	84	54:30	**0.35%**	0.52	0.62
-1	84	48:36	**0.07%**	0.10	0.15
0	84	50:34	**1.33%**	2.01	1.88
1	84	41:43	**-0.42%**	-0.64	-0.86
2	82	39:43	**0.08%**	0.12	0.26
3	79	35:44	**-0.25%**	-0.37	-0.77
4	82	41:41	**0.15%**	0.22	0.52
5	83	41:42	**-0.07%**	-0.10	-0.24
6	84	44:40	**-0.17%**	-0.25	-0.52
7	82	44:38	**-0.05%**	-0.07	-0.16
8	81	28:53	**-0.46%**	-0.70	-1.76
9	81	33:48	**-0.36%**	-0.54	-1.12
10	83	48:35	**0.25%**	0.38	0.56

The table shows event days, number of observations (N), daily average adjusted abnormal returns (ARs), number of positive and negative ARs, Time Series Deviation Test and Cross Sectional Standard Deviation Test values for acquiring banks. Event day (t=0) is the day the board proposes the stock split and calls a stallholders' meeting. The study period is from 1997 to 2006. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

Regarding the target banks, the value of the Cross Sectional Standard Deviation Test is significant on the event day -5 which suggests some leakage of information before the announcement. This explains the fact that on the fifth day, 30 from the total 52 banks have negative abnormal returns. It is also noted that the negative returns outweigh the positive until the day of the announcement. However, on the day 0, it is observed positive average abnormal return which is significant at 5% with the Cross Sectional Standard Deviation Test and at 1% with the Time Series Deviation Test. Moreover, the AAR on the day 0 is higher (4.97%) than that of acquiring banks

(1.33%). This result shows the overreaction of investors to the event, or in other words, that value is transferred from buyers to target banks. Continued positive average abnormal return with reduced performance (2.09%) is observed one day after the announcement which is significant with both tests. As we move away from the date 0, lower returns are observed, which for some days are negative as during the event period [+2,+4]. After the event day 7 (AAR = 0.004%), there is a rise of daily average adjusted abnormal returns. AAR for the event day 8 is 0.40%. The day 10 shows an increased positive AAR (0.81%), which, however, is not statistically significant with both tests.

Table 12: Average abnormal returns (AAR) for target banks using Time Series Deviation Test and Cross Sectional Standard Deviation Test

Event day	Target banks				
	N	Positive: Negative	AAR (%)	Tests	
				Time Series Deviation Test	Cross Sectional Standard Deviation Test
-10	52	23:29	**0.17%**	0.27	0.53
-9	52	29:23	**0.40%**	0.66	1.09
-8	52	29:23	**-0.28%**	-0.46	-0.61
-7	52	29:23	**0.73%**	1.21	1.03
-6	52	30:22	**-0.01%**	-0.01	-0.02
-5	51	21:30	**-0.78%**	-1.29	-1.84*
-4	51	21:30	**-0.46%**	-0.76	-0.77
-3	52	19:33	**-0.75%**	-1.23	-1.62
-2	52	29:23	**0.80%**	1.32	1.59
-1	51	21:30	**-0.02%**	-0.03	-0.04
0	52	32:20	**4.97%**	8.22***	2.03**
1	52	35:17	**2.09%**	3.46***	1.65*
2	50	18:32	**-0.83%**	-1.37	-1.88*
3	49	21:28	**-0.68%**	-1.13	-1.35
4	51	24:27	**-0.54%**	-0.90	-1.34
5	52	32:20	**0.14%**	0.23	0.38
6	52	27:25	**-0.11%**	-0.18	-0.10
7	50	28:22	**0.00%**	0.01	0.018
8	50	28:22	**0.40%**	0.66	0.48
9	51	22:29	**-0.63%**	-1.04	-1.48
10	52	25:27	**0.81%**	1.34	1.23

The table shows event days, number of observations (N), daily average adjusted abnormal returns (ARs), number of positive and negative ARs, Time Series Deviation Test and Cross Sectional Standard Deviation Test values for target banks. Event day (t=0) is the day the board proposes the stock split and calls a stallholders' meeting. The study period is from 1997 to 2006. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

The above results are also captured in the Figure 5, where the changes of AARs occurring during the 10-day period before and after the announcement are clear. Comparing the average abnormal returns, there seems to be a great divergence in favor of the target banks on the day of the announcement.

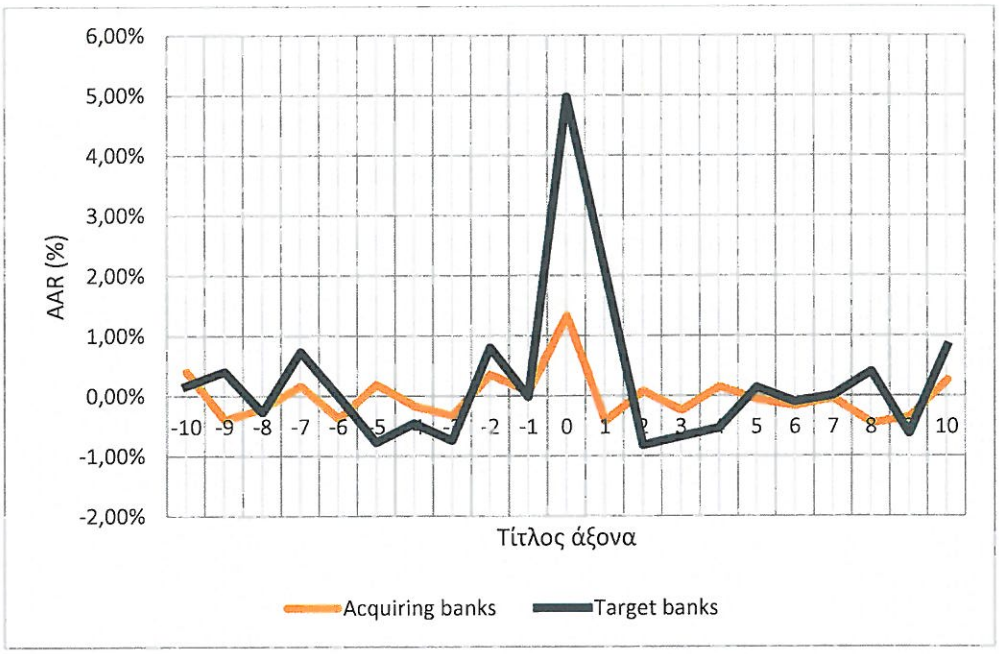


Figure 5: Average abnormal returns (AAR) for acquiring and target banks

Then, the cumulative average abnormal returns (CAARs) and the values of both tests for the acquiring and target banks are presented in the Tables 13 and 14.

First, as can be seen from the data presented in the Table 13, cumulative average abnormal returns for acquiring banks are marginally positive for all the event periods [-1.0]; [0,+1]; [-1,+1]; [-2,+2]; [-5,+5] with slight variations. The exception is the event period [-10,+10] where the CAAR is negative (-0.31%), indicating that the cumulative returns are negative and after the announcement, which confirms that acquiring banks have low or no profits. It is important to be underlined that with both Time Series Deviation and Cross Sectional Standard Deviation tests, the results are not statistically significant. These results are supported in other research studies (Tsangarakis et al., 2013; Hagendorff et al., 2008; Campa & Hernando, 2006; Goddard et al., 2012; Scholtens & de Wit, 2004; Tourani-Rad & Van Beek, 1999; Lepetit et al., 2004; Beitel et al., 2004) which demonstrate not significant data for acquiring banks and marginally positive or negative abnormal returns.

Table 13: Cumulative Average Abnormal Return (CAAR) for acquiring banks using Time Series Deviation Test and Cross Sectional Standard Deviation Test

Event periods	Acquiring banks				
	N	Positive: Negative	CAAR (%)	Tests	
				Time Series Deviation Test	Cross Sectional Standard Deviation Test
[-1,0]	84	45:39	**1.39%**	1.49	1.47
[0,+1]	84	44:40	**0.90%**	0.97	1.54
[-1,+1]	84	47:37	**0.97%**	0.85	1.13
[-2,+2]	84	46:38	**1.39%**	0.94	1.10
[-5,+5]	84	45:39	**0.91%**	0.42	0.59
[-10,+10]	84	44:40	**-0.31%**	-0.10	-0.16

The table shows number of observations (N), cumulative average adjusted abnormal returns (CAARs), number of positive and negative CAARs for the intervals [-1,0]; [0,+1]; [-1,+1]; [-2,+2]; [-5,+5]; [-10,+10], Time Series Deviation Test and Cross Sectional Standard Deviation Test values for acquiring banks. Event day (t=0) is the day the board proposes the stock split and calls a stallholders' meeting. The study period is from 1997 to 2006. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

With respect to the target banks, it is clear from the data presented in the Table 14 that the cumulative average abnormal returns are positive for all the event periods. The highest CAARs are observed during the days around the announcement and in particular for the windows [0,+1]; [-1,+1]; [-2,+2]. For these event periods, the CAARs are 7.06%, 7.04% and 7.01% respectively. As we move away from the announcement day, the values of CAARs are declining but remain positive. The Time Series Deviation Test showed statistically significant results for all the event periods, while the Cross Sectional Standard Deviation Test for the event periods [-1,0]; [0,+1]; [-1,+1] and [-2,+2]. These results confirm that investors' reactions to merger and acquisition announcements create value for the shareholders of the target banks. Similarly, the results of other studies (Tsangarakis et al., 2013; Campa & Hernando, 2006; Goddard et al., 2012; Cybo-Ottone & Murgia, 2000; Scholtens & de Wit, 2004; Campa & Hernando, 2006; Ismail & Davidson, 2007) also show that the shareholders of the target banks earn profits (positive abnormal returns).

The results are also captured in the Figure 6, where the differences for CAARs between acquiring and target banks for each event period are clear presented.

Table 14: Cumulative Average Abnormal Return (CAAR) for target banks using Time Series Deviation Test and Cross Sectional Standard Deviation Test

Event periods	Acquiring banks				
	N	Positive: Negative	CAAR (%)	Tests	
				Time Series Deviation Test	Cross Sectional Standard Deviation Test
[-1,0]	52	29:23	**4.95%**	5.79***	2.02**
[0,+1]	52	37:15	**7.06%**	8.26***	2.88*
[-1,+1]	52	31:21	**7.04%**	6.73**	2.75*
[-2,+2]	52	34:18	**7.01%**	5.19***	2.68*
[-5,+5]	52	28:24	**3.94%**	1.97**	1.39
[-10,+10]	52	28:24	**5.42%**	1.96**	1.54

The table shows number of observations (N), cumulative average adjusted abnormal returns (CAARs), number of positive and negative CAARs for the intervals [-1,0]; [0,+1]; [-1,+1]; [-2,+2]; [-5,+5]; [10,+10], Time Series Deviation Test and Cross Sectional Standard Deviation Test values for target banks. Event day (t=0) is the day the board proposes the stock split and calls a stallholders' meeting. The study period is from 1997 to 2006. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.

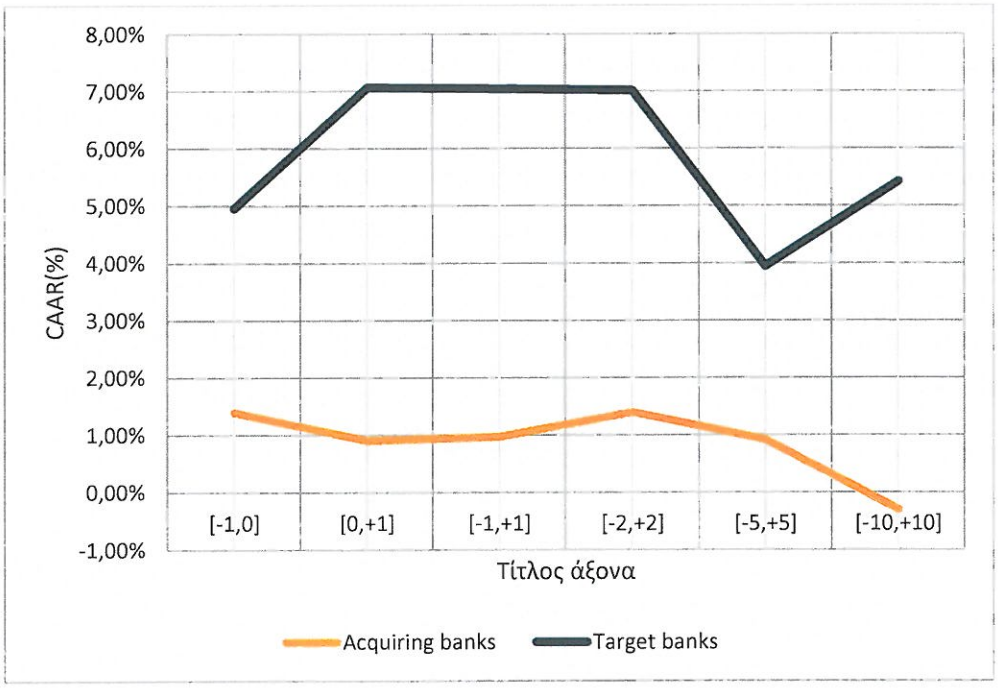


Figure 6: Cumulative Average Abnormal Return (CAAR) for acquiring and target banks

4.2 Statistical analysis of explanatory variables

The analysis carried out in the previous section, provides a first view of the benefits of the transaction. Below, we are deepening in order to explore the factors that cause changes in returns. We focus only on the sample of target banks, as the two test that were used did not show statistically significant returns for the acquiring banks.

The Table 15 shows that the sample of the target banks consists mainly of small banks with low profitability, since both the Return on Equity (ROE) (Mean = -29.13) and the Return of Assets (ROA) indexes (Mean = -0.55) are negative. Moreover, the Earnings per Share (EPS) (Mean = 4.15) and the Book to Market ratio (B/M) (Mean = 1.26) have low values, which demonstrates that the returns of the target banks shares before the announcement of M&A are low. Other studies also support these findings, underlining that target banks have low return on assets, return on equity, book to market value, earnings per share (Akhigbe et al., 2004) and generally low profitability (Hernando et al., 2009). Also, researchers such as Bruton et al. (1994); Homberg et al. (2009); Gupta & Misra (2007); Banerjee & Cooperman (2000) indicate that target banks should be smaller in size and less profitable that acquiring banks so that M&As to be successful.

Table 15: Descriptive statistics for of explanatory variables (target banks)

	ROA	ROE	EPS	Bok to Market (B/M)	Firm Size
Mean	-0.55	-29.13	4.15	1.26	17.10
Median	0.58	5.43	0.9	1	16.92
Variance	15.79	12694.9	52.65	1.51	9.43
Minimum	-21.21	-633.77	0	-1.33	11.5
Maximum	2.45	39.73	34.5	7.01	24.5

The table shows descriptive statistics for the explanatory variables based on data for target banks. Mean, Median, Variance, Minimum and Maximum values are presented for Return of Assets (ROA), Return on Equity (ROE), Earnings per Share (EPS), Book to Market ratio (B/M) and Firm size. The values are derived from the total of the target banks' sample (N = 52). For each variable, values from the previous financial year in relation to the year of the announcement are used.

However, it is underlined that for the explanatory variables which are examined in the present research, and especially the ROA, REA and EPS, there are extreme values, which is expected to negatively affect the results of the regression that will follow. For this reason, we export the outliers at 98% level (winsorize). The results after this procedure are presented in Table 16. As can be observed from the data, after the exportation of the outliers, the values of the explanatory variables are improved. The ROE's average value remains negative but improved (increased), while the ROA's average value is now marginally negative. The average values of EPS and Book to Market were increased.

Table 16: Descriptive statistics for of explanatory variables (target banks) after winsorizing

	ROA	ROE	EPS	Book to Market (B/M)	Firm Size
Mean	-0.01	-15.39	6.10	1.35	17.10
Median	0.61	5.61	2.37	1.04	16.92
Varaince	4.05	4294.8	65.88	1.39	9.43
Minimum	-6.7	-377.2	0.1	0.1	11.5
Maximum	2.5	39.7	34.5	7.0	24.5

The table shows descriptive statistics for the explanatory variables based on data for target banks after extracting of outliers. Mean, Median, Variance, Minimum and Maximum values are presented Return of Assets (ROA), Return on Equity (ROE), Earnings per Share (EPS), Book to Market ratio (B/M) and Firm size. The values are derived from the total of the target banks' sample (N = 52). For each variable, values from the previous financial year in relation to the year of the announcement are used.

We then conducted the correlation matrix for the explanatory variables in order to reveal which of them are related to each other. Table 18 shows the correlations without extracting of outliers. It is noted that there is a high positive correlation between ROA and ROE ($r = 0.934$) that is statistically significant at the 0.01 level. This means that as the return on equity increases, the return of assets increases also. Other researchers (Hutchison & Cox, 2006; Meero, 2015) also support that there is a positive relationship between equity capital and return on assets in banking sector.

Moreover, there is a moderate positive correlation between the variable B/M and ROA (r = 0.303), as well as between B/M and ROE (r = 0.275). However, these two correlations are not statistically significant. These results show that companies with high growth rates are likely to have high B/M, since investors are inclined to pay higher multiples of book value for a stock that is showing them a good return. Such relationships have been shown in the study of Macit & Topaloglu (2012).

Table 17: Correlation matrix for explanatory variables (target banks)

	ROA	ROE	EPS	Bok to Market (B/M)	Firm Size	Dummy nation
ROA	1	0.934**	0.150	0.303	0.045	-0.138
ROE	**0.934****	1	0.146	0.275	0.042	-0.073
EPS	0.150	0.146	1	-0.068	-0.137	-0.016
Book to Market (B/M)	**0.303**	**0.275**	-0.068	1	-0.184	-0.131
Firm Size	0.045	0.042	-0.137	-0.184	1	0.162
Dummy nation	-0.138	-0.073	-0.016	-0.131	0.162	1

The table shows correlations between the explanatory variables (ROA, ROE, EPS, B/M) based on data for target banks (N = 52). Numbers express the Pearson correlation coefficient and ** means that correlation is significant at the 0.01 level (2-tailed).

After the extracting of outliers (see table 18), we notice that the abovementioned correlations are maintained [ROA and ROE (r = 0.778; p < 0.01); B/M and ROA (r = 0.263; p> 0.01), B/M and ROE (r = 0.213; p> 0.01)] with slight variation in the correlation coefficient. A significant change in the correlation between B/M and EPS is perceived. However, the Person correlation coefficient is not statistically significant (r = - 0.250; p> 0.01). Similarly, the correlation between B/M and Firm Size appears to be stronger, as the value of the coefficient changed from -0.181 to -0.203. The same applies for the relationship between B/M and Dummy Nation, because of the change of the coefficient from -0.131 to -0.249. It is noted that for these correlations there is no statistically significant results, since p>0.05. However, in order to be avoid problems

during the conducting of the regressions presented below, the variables that show moderate to high correlation were not be used together.

Table 18: Correlation matrix for explanatory variables (target banks) after winsorizing

	ROA	ROE	EPS	Bok to Market (B/M)	Firm Size	Dummy nation
ROA	1	0.778**	0.062	0.263	-0.114	-0.045
ROE	**0.778****	1	-0.045	0.213	-0.051	0.041
EPS	0.062	-0.045	1	-0.250	-0.061	0.000
Book to Market (B/M)	**0.263**	**0.213**	**-0.250**	1	-0.203	-0.249
Firm Size	-0.114	-0.051	-0.061	**-0.203**	1	0.162
Dummy nation	-0.045	0.041	0.000	**-0.249**	0.162	1

The table shows correlations between the explanatory variables (ROA, ROE, EPS, B/M) based on data for target banks (N = 52). The outliers for each variable were extracted. Numbers express the Pearson correlation coefficient and ** means that correlation is significant at the 0.01 level (2-tailed).

The following chart illustrates diagrammatically the relationship between the ROA and the ROE which showing statistically significant results.

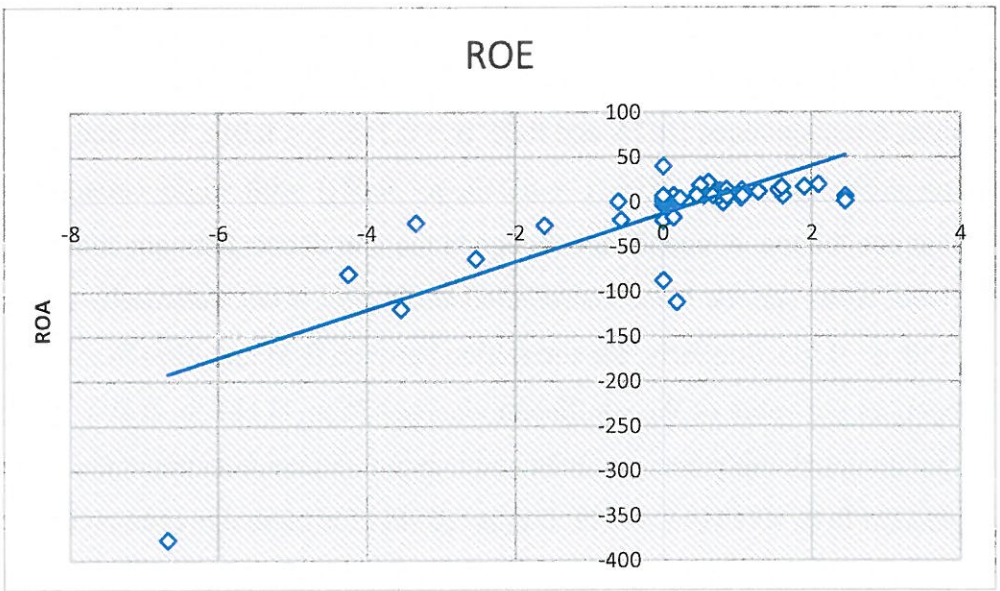


Figure 7: Correlation between ROA and ROE for target groups

4.3 Regression analysis results

In this section, an econometric analysis is performed in order to be investigated which of the explanatory variables affect the returns of the target banks. A regression analysis using the least squares method (OLS) was conducted. The cumulative abnormal return (CAR) of target banks for the event period [0,+1] was defined as dependent variable, while the independent variables were the factors presented above (ROA, ROE, EPS, B/M, Firm Size and Dummy Nation). The event period [0,+1] was selected as it showed the highest statistically significant CAAR.

The Table 19 shows the results of 8 different regression models for the event period [0,+1] in which the values of the statistical tests show the variables that have a statistically significant effect on the cumulative abnormal return (CAR) of the target banks. In all the 8 regressions, independent variables are combined excluding those with high correlation as derived from the matrix of correlations presented above. The purpose of this process, as has already mentioned, is to be limited problems with the data during the conducting of the regressions. In all the models except the seventh, the values of ANOVA test are statistically significant ($p < 0.05$) which means that the criterion F is high and hence the regression displays significance. According to the findings:

- ✓ In the first regression model, the variable Return of Assets (ROA) was removed and the value of the R^2 is 0.525. This means that 52.5% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is statistically significant at 1% level and the B coefficient is -0.045. This means that a unit increase of that variable leads to reduction of the dependent variable (CAR) by 0.045. Additionally, the value of the Book to Market (B/M) variable is marginal statistical at 5% level, while the B coefficient is positive. Therefore, the increase in the book to market ratio of the target bank increases its cumulative abnormal return (CAR) by 0.048.
- ✓ In the second regression model, the variable Return on Equity (ROE) was removed and the value of the R^2 is 0.509. This means that 50.9% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is again

statistically significant at 1% level and slightly increased. The B coefficient is -0.048. In other words, a unit increase of the size of the bank leads to reduction of the dependent variable (CAR) by 0.048. No other variable has statistically significant influence.

- ✓ In the third regression model, both Return of Assets (ROA) and Return on Equity (ROE) were removed and the value of the R^2 is 0.502. This means that 50.2% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is statistically significant at 1% level and the B coefficient is -0.045 as in the first model. The value of the variable Book to Market (B/M) shows better significance at 5% level while the B coefficient is equal to 0.055. This confirms the results of the first model and in particular that the increase in the book to market value of the target bank leads to an increase of its cumulative abnormal return by 0.055.
- ✓ In the remaining five regression models, the Book to Market variable (B/M) was removed in combination with the ROA (4^{th} model), ROE (5^{th} model), EPS (6^{th} model), Firm Size (7^{th} model) and Dummy Nation (8^{th} model). Based on the R^2 coefficients, the variance of the dependent variable (CAR), which is explained by the explanatory factors, is similar for the different regression models (from 39.8% to 45.7%). Exception is the 7^{th} model which is not statistically significant and has very low R^2 value (0.140). This is because of that the two most important regression variables namely B/M and Firm size have been deducted. In all the models (except of the seventh), the only variable that appears to be statistically significant is the one that shows the size of the bank. The coefficient B has a negative sign and ranges from -0.039 to -0.048.

In order to confirm the above results, we again carried out all the regression models by taking cumulative abnormal return (CAR) as dependent variable for the event period [-1,+1], because this period showed the second highest and significant CAAR for target banks. The results are consistent with those for the event period [0, + 1] (see Table 20).

Table 19: Regression analysis results for the event period [0,+1]

	Regression (1)	t-statistic	Regression (2)	t-statistic	Regression (3)	t-statistic	Regression (4)	t-statistic	Regression (5)	t-statistic	Regression (6)	t-statistic	Regression (7)	t-statistic	Regression (8)	t-statistic
c	0.975	0.000	1.050	0.000	0.990	0.000	0.772	0.000	0.852	0.000	0.909	0.000	0.160	0.057	0.878	0.001
ROA			-0.012	0.540					-0.021	0.283	0.000	0.991	-0.004	0.920	0.002	0.957
ROE	-0.001	0.276					0.002	0.125			0.000	0.753	-0.001	0.584	-0.001	0.478
EPS	0.000	0.914	-0.001	0.860	0.000	0.896	-0.039	0.555	0.001	0.809			0.003	0.611	0.002	0.668
Bok to Market	0.048	**0.045**	0.061	0.161	0.055	**0.020**										
Firm Size	-0.045	**0.000**	-0.048	**0.001**	-0.045	**0.000**	-0.039	**0.001**	-0.048	**0.002**	-0.046	**0.000**			-0.048	**0.002**
Dummy nation	-0.102	0.081	-0.101	0.150	-0.097	0.098	-0.075	0.207	-0.116	0.107	-0.106	0.056	-0.122	0.170		
R^2	0.525		0.509		0.502		0.424		0.457		0.454		0.140		0.398	
ANOVA	5.534***		4.146*		6.545***		4.969***		4.417*		6.439***		0.858		3.477**	

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively

- ✓ In the first regression model, the value of the R^2 is 0.503. This means that 50.3% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is statistically significant at 1% level and the B coefficient is -0.044. This means that a unit increase of that variable leads to reduction of the dependent variable (CAR) by 0.044. The value of the Book to Market (B/M) shows better significance at 5% level (0.052) in relation to the corresponding for the event period [0, + 1]. So, the increase of the book to market value of the target bank increases its cumulative abnormal return (CAR) by 0.052.
- ✓ In the second regression model, the value of the R^2 is 0.492. This means that 49.2% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is statistically significant at 1% level and slightly increased (B = -0.047). This means that a unit increase of that variable leads to reduction of the dependent variable (CAR) by 0.047. The value of the Book to Market (B/M) variable is not statistically significant
- ✓ In the third regression model the value of the R^2 is 0.481. This means that 48.1% of the variance of the dependent variable (CAR) is explained by the independent variables of the model. The value of the variable representing the size of the bank is statistically significant at 1% level and the B coefficient is -0.045. The value of the variable Book to Market (B/M) shows better significance at 5% level in relation to the event period [0,+1], while the B coefficient is equal to 0.059. This confirms that the increase in the book to market value of the target bank leads to an increase of its cumulative abnormal return.
- ✓ In the remaining five regression models, the variance of the dependent CAR variable, based on the R2 coefficients, is similar (from 36.4% to 44.0%). Exception is again the 7th model which is not statistically and has very low R^2 value (0.136). In all the models (except of the seventh), the variable appears to be statistically significant is the one that shows the size of the bank. The coefficient B has a negative sign and ranges from -0.038 to -0.048. However, the 6th regression model shows that the variable "Dummy nation" is statistically significant at 5% level with negative value of B (-0.127). This means that domestic transactions lead to a decrease in cumulative returns of target banks by 0.127.

Table 20: Regression analysis results for the event period [-1,+1]

	Regression (1)	t-statistic	Regression (2)	t-statistic	Regression (3)	t-statistic	Regression (4)	t-statistic	Regression (5)	t-statistic	Regression (6)	t-statistic	Regression (7)	t-statistic	Regression (8)	t-statistic
c	0.966	0.000	1.046	0.000	0.981	0.000	0.751	0.000	0.947	0.001	0.913	0.000	0.170	0.047	0.870	0.002
ROA			-0.013	0.522					-0.022	0.273	-0.002	0.925	-0.010	0.811	-0.003	0.923
ROE	-0.001	0.300					-0.002	0.133			0.000	0.862	-0.001	0.692	-0.001	0.602
EPS	0.000	0.957	-0.002	0.675	0.000	0.976	0.003	0.453	-0.000	0.988			0.002	0.763	0.001	0.839
Bok to Market	0.052	**0.038**	0.062	0.169	0.059	**0.017**										
Firm Size	-0.044	**0.000**	-0.047	**0.002**	-0.045	**0.000**	-0.038	**0.002**	-0.047	**0.003**	-0.046	**0.000**			-0.048	**0.004**
Dummy nation	-0.099	0.108	-0.111	0.126	-0.093	0.127	-0.071	0.256	-0.125	0.089	-0.127	**0.033**	-0.133	0.145		
R^2	0.503		0.492		0.481		0.395		0.440		0.438		0.136		0.364	
ANOVA	5.058***		3.877**		6.014***		4.399***		4.132*		6.034***		0.829		3.011**	

***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively

In conclusion, the results of the regressions performed in this study showed that the determinants of value creation for the target banks are their size, the book to market ratio, as well as if the M&A is cross-border or between banks from the same country.

Specifically, almost all the different regression models for the time periods [0, + 1] and [-1, + 1] proved that the variable considering the size of the target banks exerts a statistically significant effect on the cumulative abnormal returns (CAR). The coefficient of the variable "firm size" in all the models was statistically significant and is appeared with a negative sign, which leads to the conclusion that as the size of the target bank increases, the abnormal returns received by the shareholders are reduced. Similarly, other researchers (Bruton et al., 1994; Homberg et al., 2009; Gupta & Misra, 2007) concluded that acquisitions of small banks are more profitable for the shareholders of the target banks. The results conducted by Ahuja & Katila (2001); Krishanan et al. (2007) are opposite since these researchers argue that when acquirer and target have the same size, the success of M&As is higher. Also, in the research of Cybo-Ottone & Murgia (2000), it was not proven that the size of banks which are involved in M&As, affect their cumulative abnormal returns.

Additionally, the results of the regressions proved that the stock performance has a significant effect on the cumulative abnormal returns of target banks. Specifically, there were no statistically significant results for the variable "Earnings per Share" that is in the line with the findings of Beitel et al. (2004). On the other side, we found that the variable "Book to Market ratio" was statistically significant in two of the eight regressions for both time periods. The sign of the variable coefficient was positive, indicating that as the book to market value of the target banks increases, the cumulative abnormal returns also increase. The positive relationship between Book to Market ratio and CAR has been demonstrated in other research studies such as that of Lam (2002). However, our findings are in contrast to those of Al - Sharkas & Hassan (2010), according to which there is no statistically significant effect of the book to market value on the creation of positive cumulative abnormal returns.

Regarding the dummy variable that determines the geographical location of the banks, only one of the eight regression model for the time period [-1,+1] revealed a statistically significant result. The coefficient of the variable is appeared with a negative sign, meaning that cross-border mergers and acquisitions are associated with greater value for the shareholders of the target banks. This is in agreement with the findings of

several researchers (Ismail & Davidson, 2005; Beitel et al., 2004; Tsangarakis et al., 2013), but disagrees with others (Lapetit et al., 2004; Becher & Campbell, 2005; Cornett et al., 2000).

Finally, on the explanatory variables that focus on the corporate profitability (ROA and ROE), the present investigation has not proved that they exert significant influence on the cumulative abnormal returns of the targets banks. The same is supported by Beitel et al. (2004). However, other studies (Ismail & Davidson, 2005; Hagendorff et al., 2008) show exactly the opposite effect pointing out that there is a positive and statistically significant relationship between both ROA and CAR and ROE and CAR.

CHAPTER 5: CONCLUSION

The purpose of the thesis is to study the stock price reaction due to merger and acquisition (M&A) announcement both target and acquiring banks in Europe for the period 1997-2016. Both acquirers and targets included in the final sample were publicly listed, while in addition the M&A deals were completed and the acquirer owned a minimum of 51% of shares after the acquisition.

Using the Market Adjusted Returns Model, the research findings showed that the average abnormal returns (AAR) for the acquiring banks were not statistically significant for the whole period. One day before the announcement of the transaction, average abnormal returns were marginally positive. On the date of the M&A announcement the AAR was positive, but low. However, on the day after the announcement, the AAR was negative (-0.42%), which was maintained until the day 9 after the announcement, with the exception of the day 2, when the AAR was again marginally positive. On the contrary, for target banks the negative returns outweigh the positive until the day of the announcement. On the day of the announcement, it was observed positive and significant average abnormal return, which in addition was much higher than that of acquiring banks. Continued positive average abnormal return with reduced performance was observed one day after the announcement which was also significant. As we were moving away from the date 0, lower returns were observed.

Similar were the results for the cumulative average abnormal returns (CAAR) that were examined for the time periods [-1,0]; [0,+1]; [-1,+1]; [-2,+2]; [-5,+5]; [-10,+10]. Specifically, the results for the target banks were statistically positive for all the time periods. Highest CAARs were observed during the days around the announcement and in particular for the windows [0,+1]; [-1,+1]; [-2,+2]. On the contrary, for the acquiring banks, there were marginally positive and not statistically significant results for the first four time periods and negative for the time window [-10,+10].

Additionally, the factors influencing the success of mergers and acquisitions were identified through regression analysis using the least squares method (OLS). As explanatory variables were determined the Return of Assets (ROA), the Return on Equity (ROE), Earnings per Share (EPS), Book to Market ratio (B/M), the Bank size and Nation (geographical location of the banks including in the M&A process).

The results showed that the size, the geographical location, and the book to market ratio have a statistically significant effect on the cumulative abnormal returns of the target banks. This leads to the conclusion that mergers and acquisitions are profitable for the shareholders of the target banks when they are small in size, have high book to market ratio and the transaction focuses on geographical diversification.

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Appendix: End Sample

YEAR	M/A	NATIONAL/ CROSS BORDER	NAME Acquirer	NATION Acquirer	DS Mnemonic (A)	NAME Target	NATION Target	DS Mnemonic (T)	Annuncement Day
1997	Acquisition Of Majority Assets	National	Banca Popolare di Verona-Banco di San Geminiano e San Prospero	Italy	NO	Credito Bergamasco	Italy	I:CB	28/7/1997
1998	Acquisition Of Majority Assets	National	Banco de Santander SA	Spain	E:SCH	Banco Espanol de Credito {Banesto}	Spain	E:BTO	19/2/1998
1999	Acquisition Of Majority Assets	Cross border	Deutsche Bank AG	Germany	D:DBKX	Unicredito Italiano SpA	Italy	I:UCG	6/1/1999
1999	Acquisition Of Majority Assets	National	Banque Nationale de Paris{BNP}	France	F:BNP	Paribas SA	France	NO	9/3/2017
1999	Acquisition Of Majority Assets	Cross border	Banco Bilbao Vizcaya SA	Spain	E:BBVA	Credit Lyonnais Portugal	Portugal	NO	15/3/1999
1999	Acquisition Of Majority Assets	National	Alpha Credit Bank	Greece	G:PIST	Ionian Bank(Commerce Bank Group)	Greece	NO	29/3/1999
1999	Acquisition Of Majority Assets	National	Banca Intesa SpA	Italy	I:ISP	Banca Commerciale Italiana SpA	Italy	NO	31/5/1999
1999	Acquisition Of Majority Assets	National	EFG Eurobank SA	Greece	G:EFG	Hermis Bank	Greece	NO	9/6/1999
1999	Acquisition Of Majority Assets	Cross border	Skandinaviska Enskilda Banken AB	Sweden	W:SEA	Latvijas Unibanka	Latvia	NO	20/8/1999
1999	Merger	Cross border	Nordbanken Holding AB	Sweden	W:NDA	Merita Oy	Finland	NO	20/9/1999
1999	Merger	National	Banco Bilbao Vizcaya SA	Spain	E:BBVA	Argentaria Caja Postal y Banco Hipotecario De Espana SA	Spain	NO	19/10/1999
1999	Acquisition Of Majority Assets	Cross border	Erste Group Bank AG	Austria	O:ERS	Ceska Sporitelna Savings Bank	Czechia	NO	29/101999
1999	Acquisition Of Majority Assets	Cross border	Banco Santander Central Hispano SA	Spain	E:SCH	Banco Totta e Acores SA (Grupo Champalimaud)	Portugal	NO	12/11/1999
1999	Merger	National	Royal Bank of Scotland Group PLC	United Kingdom	RBS	National Westminster Bank PLC	United Kingdom	597189	29/11/1999
1999	Merger	National	Bank of Piraeus SA	Greece	G:PEIR	Macedonia-Thrace Bank(Greece)	Greece	NO	20/12/1999
2000	Acquisition Of Majority Assets	National	Banco Comercial Portugues SA	Portugal	P:BCP	Banco Mello SA(Grupo Mello)	Portugal	NO	12/1/2000
2000	Acquisition Of Majority Assets	Cross border	Banco Santander Central Hispano SA	Spain	E:SCH	Societe Generale SA	France	F:SGE	31/1/2000
2000	Acquisition Of Majority Assets	National	Banco Comercial Portugues SA	Portugal	P:BCP	Banco Pinto & Sotto Mayor SA (Mundial Cofianca)	Portugal	NO	31/3/2000
2000	Acquisition Of Majority Assets	National	Banca Popolare dell'Emilia Romagna SC SpA	Italy	I:BPE	Banco di Sardegna SpA (Fondazione Banco di Sardegna)	Italy	I:BSRP	19/4/2000
2000	Merger	National	Barclays PLC	United Kingdom	BARC	Woolwich PLC	United Kingdom	NO	11/8/2000

2000	Merger	Cross border	Skandinaviska Enskilda Banken AB	Sweden	W:SEA	Vilniaus Bank	Lithuania	NO	28/8/2000
2000	Merger	National	Danske Bank A/S	Denmark	DK:DAB	RealDanmark A/S	Denmark	NO	2/10/2000
2000	Acquisition Of Majority Assets	Cross border	Commerzbank AG	Germany	D:CBKX	Bank Rozwoju Eksportu SA	Poland	PO:MBK	18/10/2000
2000	Acquisition Of Majority Assets	Cross border	Deutsche Bank AG	Germany	D:DBKX	Mediobanca Banca di Credito Finanziario SpA	Italy	I:MB	26/10/2000
2001	Merger	Cross border	Svenska Handelsbanken AB	Sweden	W:SVK	Midtbank A/S	Denmark	NO	11/4/2001
2001	Acquisition Of Majority Assets	National	Banco Totta e Acores SA	Portugal	NO	Banco BPI SA	Portugal	P:BPI	2/5/2001
2001	Acquisition Of Majority Assets	National	BRE Bank SA	Poland	PO:MBK	Bank Czestochowa(Bank Rozwoju Eksportu SA/ Commerzbank)	Poland	NO	26/5/2001
2001	Acquisition Of Majority Assets	Cross border	IntesaBci SpA	Italy	I:ISP	Vseobcna Uvervo Banka AS	Slovakia	NO	27/6/2001
2001	Acquisition Of Majority Assets	Cross border	Societe Generale SA	France	F:SGE	Komercni Banka AS	Czechia	CZ:KOM	28/6/2001
2001	Acquisition Of Majority Assets	Cross border	Banco Comercial Portugues SA	Portugal	P:BCP	BIG Bank Gdanski SA	Poland	PO:MIB (NO RI)	21/9/2001
2001	Acquisition Of Majority Assets	National	Bank of Piraeus SA	Greece	G:PEIR	Hellenic Industrial Development Bank SA	Greece	NO	31/10/2001
2001	Merger	National	Unicredito Italiano SpA	Italy	I:UCG	Rolo Banca 1473(Credito Italiano)	Italy	NO	14/12/2001
2002	Acquisition Of Majority Assets	Cross border	Erste Group Bank AG	Austria	O:ERS	Rijecka Banka	Croatia	NO	12/4/2002
2002	Acquisition Of Majority Assets	Cross border	Unicredito Italiano SpA	Italy	I:UCG	Zivnostenska Banka AS	Czechia	NO	14/8/2002
2002	Acquisition Of Majority Assets	Cross border	Skandinaviska Enskilda Banken AB	Sweden	W:SEA	Amagerbanken A/S	Denmark	DK:AMA	27/9/2002
2002	Merger	National	Vestjysk Bank A/S	Denmark	DK:VJK	Nordvestbank A/S	Denmark	NO	28/10/2002
2002	Merger	National	Credit Agricole SA	France	F:CRDA	Credit Lyonnais SA	France	557039	16/12/2002
2003	Acquisition Of Majority Assets	National	Bayerische Hypo-und Vereinsbank AG	Germany	NO	Wuerttembergische Hypothekenbank AG	Germany	D:WHY7	14/4/2003
2003	Acquisition Of Majority Assets	National	Banco de Sabadell SA	Spain	E:BSAB	Banco Atlantico SA	Spain	NO	19/12/2003
2004	Acquisition Of Majority Assets	Cross border	Societe Generale SA	France	F:SGE	General Hellenic Bank	Greece	G:TGEN	19/1/2004
2004	Acquisition Of Majority Assets	National	Credit Foncier de France SA	France	NO	Credit Foncier et Communal d Alsace et de Lorraine Banque SA	France	F:CFCL	21/6/2004
2004	Merger	Cross border	Santander Central Hispano SA	Spain	E:SCH	Abbey National PLC	United Kingdom	846993	23/7/2004
2005	Merger	Cross border	Unicredito Italiano SpA	Italy	I:UCG	Bayerische Hypo-und Vereinsbank AG	Germany	NO	30/5/2005
2005	Acquisition Of Majority Assets	National	Commerzbank AG	Germany	D:CBKX	Eurohypo AG	Germany	NO	15/11/2005
2006	Acquisition Of Majority Assets	Cross border	Credit Agricole SA	France	F:CRDA	Emporiki Bank SA	Greece	G:EMP	13/6/2006

2006	Merger	Cross border	Cyprus Popular Bank Ltd	Cyprus	CP:CPB	Egnatia Bank SA	Greece	G:EGNC	4/7/2006
2006	Merger	Cross border	Unicredito Italiano SpA	Italy	I:UCG	Bank BPH SA	Poland	PO:BPH	4/8/2006
2006	Merger	Cross border	UBS AG	Switzerland	S:UBSN	DEPFA Bank PLC	Ireland	NO	13/10/2006
2006	Acquisition Of Majority Assets	Cross border	Liechtensteinische Landesbank AG	Liechtenstein	NO	Bank Linth	Switzerland	S:LINN	7/12/2006
2007	Acquisition Of Majority Assets	National	Intesa Sanpaolo SpA	Italy	I:ISP	Banca CR Firenze SpA	Italy	NO	18/6/2007
2008	Merger	National	Sydbank A/S	Denmark	DK:SYD	bankTrelleborg A/S	Denmark	NO	21/1/2008
2008	Acquisition Of Majority Assets	Cross border	Allied Irish Banks PLC	Ireland	AIB1	Bulgarian American Credit Bank AD	Bulgaria	BL:CBB	22/2/2008
2007	Merger	National	Bank Polska Kasa Opieki SA	Poland	PO:PKA	Bank BPH SA	Poland	PO:BPH	4/10/2007
2008	Acquisition Of Assets	National	Inverplus Actius Mobiliaris SICAV SA	Spain	E:I883	Matelco 234 SA SICAV	Spain	NO	3/4/2008
2008	Acquisition Of Majority Assets	National	Commerzbank AG	Germany	D:CBKX	Commerzbank AG von 1870	Germany	NO	9/4/2008
2008	Merger	National	Banca Popolare dell'Emilia Romagna SC SpA	Italy	I:BPE	Meliorbanca SpA	Italy	NO	24/6/2008
2008	Merger	Cross border	Banco Santander SA	Spain	E:SCH	Alliance & Leicester PLC	United Kingdom	PO:BOS (NO RI)	14/7/2008
2008	Acquisition Of Majority Assets	Cross border	Svenska Handelsbanken AB	Sweden	W:SVK	Lokalbanken i Nordsjaelland A/S	Denmark	NO	15/9/2008
2008	Merger	National	Lloyds TSB Group PLC	United Kingdom	LLOY	HBOS PLC	United Kingdom	NO	17/9/2008
2008	Merger	National	Vestjysk Bank A/S	Denmark	DK:VJK	Bonusbanken A/S	Denmark	NO	29/9/2008
2009	Acquisition Of Majority Assets	National	Unione di Banche Italiane SpA	Italy	I:UBI	IW Bank SpA	Italy	I:IWA	4/3/2009
2009	Acquisition Of Majority Assets	National	Banco Popolare SC	Italy	NO	Banca Italease SpA	Italy	I:BIL	15/3/2009
2009	Merger	National	Banco Popular Espanol SA	Spain	NO	Banco de Andalucia SA	Spain	E:AND	19/3/2009
2009	Merger	Cross border	Nordea Bank AB	Sweden	W:NDA	Fionia Bank A/S	Denmark	DK:FIO	31/8/2009
2010	Acquisition Of Majority Assets	Cross border	Bankas Snoras AB	Lithuania	LT:BAS	Latvijas Krajbanka AS	Latvia	LV:LKB	30/3/2010
2010	Acquisition Of Majority Assets	Cross border	AD "Tsentralna Kooperativna Banka"	Bulgaria	BL:CBC	Stater Banka AD Kumanovo	Macedonia (the former Yugoslav Republic of)	NO	12/4/2010
2010	Merger	National	Max Bank A/S	Denmark	DK:HVB	Skaelskor Bank A/S	Denmark	DK:SKA	27/5/2010
2010	Merger	National	Banco de Sabadell SA	Spain	E:BSAB	Banco Guipuzcoano SA	Spain	NO	25/6/2010
2010	Acquisition Of Majority Assets	National	Caixa Economica Montepio Geral	Portugal	PO:BOS (NO RI)	Finibanco Holding SGPS SA	Portugal	P:FNB	30/7/2010
2010	Acquisition Of Majority Assets	Cross border	Banco Santander SA	Spain	E:SCH	Bank Zachodni WBK SA	Poland	PO:BZW	10/9/2010

2010	Merger	National	Sparekassen Lolland A/S	Denmark	DK:SPL	Eik Bank Danmark 2010 A/S	Denmark	NO	17/12/2010
2011	Merger	National	Banco Popular Espanol SA	Spain	NO	Banco Pastor SA	Spain	E:PAS	7/10/2011
2012	Merger	National	Vestjysk Bank A/S	Denmark	DK:VJK	Aarhus Lokalbank A/S	Denmark	DK:AAR	25/1/2012
2012	Merger	National	Bank Zachodni WBK SA	Poland	PO:BZW	Kredyt Bank SA	Poland	NO	28/2/2012
2012	Merger	National	CaixaBank SA	Spain	E:CABK	Banca Civica SA	Spain	E:BCIV	26/3/2012
2012	Merger	National	Spar Nord Bank A/S	Denmark	DK:SNB	Sparbank A/S	Denmark	DK:SPV	18/9/2012
2012	Acquisition Of Majority Assets	National	National Bank of Greece SA	Greece	G:ETE	Eurobank Ergasias SA	Greece	G:EFG	5/10/2012
2012	Merger	National	Bank of Piraeus SA	Greece	G:PEIR	General Bank of Greece SA	Greece	G:TGEN	19/10/2012
2012	Merger	National	CaixaBank SA	Spain	E:CABK	Banco de Valencia SA	Spain	E:BVA	16/11/2012
2012	Merger	National	Salling Bank A/S	Denmark	DK:SAL	A/S Vinderup Bank	Denmark	DK:VIN	12/9/2012
2013	Merger	National	Jyske Bank A/S	Denmark	DK:JYS	Sparekassen Lolland A/S	Denmark	DK:SPL	28/1/2013
2013	Merger	National	AO Alliance Bank	Kazakhstan	KZ:TEB (NO RI)	OA Temirbank	Kazakhstan	KZ:TEB	3/5/2013
2013	Merger	National	Powszechna Kasa Oszczednosci Bank Polski SA	Poland	PO:PKB	Nordea Bank Polska SA	Poland	PO:KOM	12/6/2013
2013	Merger	National	Eurobank Ergasias SA	Greece	G:EFG	TT Hellenic Postbank SA	Greece	G:POST	9/7/2013
2013	Merger	National	Svendborg Sparekasse A/S	Denmark	DK:FYN	Vestfyns Bank A/S	Denmark	DK:VEB	4/9/2013
2013	Merger	National	Lollands Bank A/S	Denmark	DK:LOL	Vordingborg Bank A/S	Denmark	DK:VOR	14/8/2013
2013	Acquisition Of Majority Assets	National	Sydbank A/S	Denmark	DK:SYD	Diba Bank A/S	Denmark	DK:DIB	11/11/2013
2013	Acquisition Of Majority Assets	National	Kazkommertsbank JSC	Kazakhstan	KZ:KKG	AO BTA Bank	Kazakhstan	KZ:BTA	23/12/2013
2013	Acquisition Of Majority Assets	National	Banco Di Desio e Della Brianza SpA	Italy	I:BDB	Banca Popolare di Spoleto SpA	Italy	I:SPO	29/11/2013
2014	Merger	National	Kazkommertsbank JSC	Kazakhstan	KZ:KKG	AO BTA Bank	Kazakhstan	KZ:BTA	8/10/2014
2014	Merger	National	Bank Gospodarki Zywnosciowej SA	Poland	PO:BGZ	BNP Paribas Bank Polska SA	Poland	PO:BNP	10/10/2014
2014	Acquisition Of Majority Assets	National	Nordjyske Bank A/S	Denmark	DK:ENO	A/S Norresundby Bank	Denmark	DK:NRE	9/10/2014
2016	Acquisition Of Majority Assets	Cross border	CaixaBank SA	Spain	E:CABK	Banco BPI SA	Portugal	P:BPI	18/4/2016
2016	Acquisition Of Majority Assets	National	Alior Bank SA	Poland	PO:ALR	Bank BPH SA	Poland	PO:BPH	1/4/2016