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ΤΜΗΜΑ ΟΙΚΟΝΟΜΙΚΗΣ ΕΠΙΣΤΗΜΗΣ

MERGERS AND ACQUISITIONS IN GREEK BANKING SECTOR: AN EMPIRICAL ANALYSIS – IMPLICATIONS FROM THE RECENT GLOBAL CRISIS

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Διατριβή υποβληθείσα προς μερική εκπλήρωση
των απαραιτήτων προϋποθέσεων
για την απόκτηση του
Μεταπτυχιακού Διπλώματος Ειδίκευσης

Αθήνα
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Abstract

The purpose of this paper is to analyze the deals occurred during the period from 1999 to 2007 in Greece. The sample includes the six largest transactions and it is examined in terms of abnormal returns that were generated and of financial and accounting performance. The strategic purposes are also discussed which drove the merging activity. The theoretical background for mergers and acquisitions is presented. Finally, the subprime market implications and hypothesis about a potential second merger wave are included in the analysis.

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Summary (in Greek)

Ο βασικός σκοπός αυτής της έρευνας είναι η ανάλυση όλων των συναλλαγών την περίοδο 1999-2007 στον ελληνικό τραπεζικό κλάδο. Το δείγμα αποτελείται από τις 6 μεγαλύτερες συγχωνεύσεις και εξετάζεται σε όρους αντικανονικών αποδόσεων (abnormal returns) καθώς και χρηματοοικονομικών-λογιστικών αποδόσεων. Επίσης, αναφέρονται και οι στρατηγικοί σκοποί που οδήγησαν σε μια συγχώνευση ή εξαγορά.

Η έρευνα χωρίζεται σε 6 βασικά μέρη:

1. γίνεται μια αναφορά σε παλαιότερη βιβλιογραφία για τις συγχωνεύσεις και τις εξαγορές των τραπεζών,
2. παρατίθεται το θεωρητικό υπόβαθρο των συγχωνεύσεων και εξαγορών,
3. ακολουθεί η εμπειρική ανάλυση των δεδομένων του δείγματος,
4. η ανάλυση σε όρους αντικανονικών αποδόσεων με άξονα την ημερομηνία ανακοίνωσης της συναλλαγής (event study),
5. η ανάλυση της μακροχρόνιας απόδοσης των συγχωνευμένων εταιριών,
6. και τέλος μια αναφορά στην πρόσφατη παγκόσμια οικονομική κρίση και πώς αυτή θα μπορούσε να αποτελέσει κίνητρο για ένα νέο κύμα συγχωνεύσεων στον ελληνικό τραπεζικό κλάδο.

1. Βιβλιογραφία

Η αναφορά σε παλαιότερη βιβλιογραφία αφορά σε παράθεση ερευνών που έχουν γίνει στο παρελθόν για συγχωνεύσεις σε όλο τον κόσμο και στην Ελλάδα. Η βιβλιογραφία των συγχωνεύσεων και εξαγορών στον τραπεζικό τομέα είναι πολύ μεγάλη, για αυτό το λόγο έχουν παρατεθεί κάποιες από αυτές τις έρευνες, οι οποίες αναφέρονται κατά κύριο λόγο στην αποτελεσματικότητα των συγχωνεύσεων. Βέβαια αξίζει να σημειωθεί ότι τα αποτελέσματα ποικίλουν στο κατά πόσο οι συγχωνεύσεις των τραπεζών μπορούν να αυξήσουν την αξία τους αφού οι έρευνες αναφέρονται σε διαφορετικές χώρες, διαφορετικές οικονομίες και διαφορετική χρονική περίοδο.

2. Θεωρητικό υπόβαθρο των συγχωνεύσεων

Η έννοια της συγχώνευσης με την εξαγορά διαφέρει στο εξής:

- Εξαγορά έχουμε όταν μια εταιρία αγοράζει μια άλλη εταιρία και η εταιρία-στόχος παύει να υφίσταται, ενώ η μετοχή της εταιρίας - αγοραστή συνεχίζει να διαπραγματεύεται.
- Αντίθετα, συγχώνευση είναι ο συνδυασμός δύο εταιριών του ίδιου μεγέθους σε μια μεγαλύτερη.

Τα είδη των συγχωνεύσεων και εξαγορών είναι τα εξής: οριζόντιες, κάθετες και η κοινοπραξία επιχειρήσεων διαφόρων κλάδων δραστηριότητας.

Τα βασικά βήματα μιας συγχώνευσης είναι πέντε: ανάπτυξη κοινής στρατηγικής, επιλογή στρατηγικής από τον αγοραστή, συγκρότηση της συναλλαγής και διαπραγμάτευση, ενσωμάτωση μετά τη συγχώνευση των εταιριών και των διαφορετικών συστημάτων τους, και τέλος ο έλεγχος για το αν ήταν επιτυχής η συναλλαγή, η αποτίμηση των λαθών εάν δεν ήταν επιτυχής.

Όσον αφορά τα κίνητρα των συγχωνεύσεων και εξαγορών αναλύονται σε πέντε διαφορετικές θεωρίες: οικονομικές θεωρίες, διοικητικές θεωρίες, χρηματοοικονομικές θεωρίες, στρατηγικές θεωρίες και οργανωτικές και θεωρίες συμπεριφοράς. Στην συνέχεια παρατίθενται μέτρα αποφυγής μιας συγχώνευσης ή εξαγοράς από την μεριά της εταιρία στόχο καθώς .και μέτρα που παίρνει αφού έχει γίνει η εξαγορά.

3. Εμπειρική Ανάλυση

Σε αυτό το σημείο, εξετάζουμε την λειτουργική απόδοση των τραπεζών του δείγματός μας 2 χρόνια πριν την ανακοίνωση της συγχώνευσης. Το δείγμα μας είναι το εξής:

Ημερομηνία ανακοίνωσης	Εταιρία- Αγοραστής	Εταιρία- στόχος
29/3/1999	Alpha Bank	Ioniki Bank
9/6/1999	Eurobank	Ergobank
20/12/1999	Piraeus Bank	Macedonia & Thrace Bank
20/12/1999	Piraeus Bank	Chios Bank
9/6/1999	Eurobank	Telesis Investment Bank
23/03/2006	Marfin Investment Group	Egnatia Bank

Στο συγκεκριμένο σημείο της ανάλυσης χρησιμοποιούνται χρηματοοικονομικοί δείκτες όπως: capital-assets ratio, loans-total assets ratio, diversity earnings ratio, other expenses in services & technology ratio, ROA, ROE, Net Profit Margin ratio, capital coverage ratio and relative size ratio.

Υπολογίζοντας το μέσο όρο των παραπάνω δεικτών για τον αγοραστή και την εταιρία στόχο συμπεραίνεται ότι οι δείκτες ROE και ROA είναι υψηλότεροι για τις εταιρίες-αγοραστές , ενώ ο δείκτης loans-total assets είναι υψηλότερος για τις εταιρίες-στόχο, πράγμα που σημαίνει ότι έχουν υψηλότερο δανεισμό πριν την συγχώνευση.

4. Ανάλυση αντικανονικών αποδόσεων

Για τον υπολογισμό των αντικανονικών αποδόσεων χρησιμοποιούνται οι τιμές κλεισίματος των μετοχών των αγοραστών και των εταιριών-στόχων λίγες μέρες πριν και μετά την ημερομηνία ανακοίνωσης των συγχωνεύσεων καθώς και η τιμή κλεισίματος του Γενικού Δείκτη του Ελληνικού Χρηματιστηρίου για τις ίδιες ημέρες. Τα αποτελέσματα είναι ιδιαίτερα ενδιαφέροντα, αφού η πιο πετυχημένη συγχώνευση ήταν της Alpha Bank με την Ιονική Τράπεζα με cumulative abnormal return θετικές στα 28% και 9,39%. Επίσης, παρατηρείται ότι οι εταιρίες-αγοραστές σημειώνουν μεγαλύτερες αποδόσεις από τις εταιρίες- στόχους εκτός από την περίπτωση της Eurobank με την Ergobank που συμβαίνει το αντίθετο.

5. Ανάλυση μακροχρόνιας απόδοσης

Στην ανάλυση μακροχρόνιας απόδοσης υπολογίζονται οι αποδόσεις των τραπεζών-αγοραστών με βάση τις τιμές κλεισίματος 66 μέρες και 126 μέρες μετά την ημερομηνία ανακοίνωσης της συγχώνευσης. Στη συνέχεια συγκρίνονται με την πορεία του δείκτη εκείνη την περίοδο και τα συμπεράσματα που απορρέουν είναι τα εξής: η Alpha Bank είχε την υψηλότερη απόδοση και στις 2 υποπεριόδους συμβαδίζοντας με την απόδοση του δείκτη. Η Eurobank είχε υπό-απόδοση σε σχέση με τον δείκτη αποδεικνύοντας ότι η συγχώνευση αυτή δημιούργησε αβεβαιότητα στην αγορά. Η Τράπεζα Πειραιώς συμβάδισε με τον δείκτη μια περίοδο όπου το Ελληνικό Χρηματιστήριο περνούσε μια ισχυρή κρίση, ενώ η Marfin παρουσίασε υπέρ-απόδοση.

6. Αναφορά στην πρόσφατη οικονομική κρίση

Στο τελευταίο μέρος αυτής της έρευνας γίνεται μια αναφορά στην πρόσφατη παγκόσμια οικονομική κρίση που έχει πλήξει την παγκόσμια οικονομία δημιουργώντας έτσι και προβλήματα στις ελληνικές τράπεζες. Ενώ στην Ευρώπη και Αμερική πολλοί χρηματοπιστωτικοί οργανισμοί δεν βγήκαν νικητές από αυτή την κρίση και ή πτώχευσαν ή συγχωνεύτηκαν, οι Ελληνικές Τράπεζες μπόρεσαν μέχρι και τώρα και διατηρήθηκαν χωρίς μεγάλες απώλειες. Βέβαια, φήμες θέλουν στο σύντομο μέλλον να πραγματοποιούνται συγχωνεύσεις των τραπεζών με σκοπό την επιβίωση τους και κατ' επέκταση την διεύρυνσή τους και εκτός των ελληνικών συνόρων.

1. Literature review

In the attempt to consider the results of potential bank mergers in Greece, it is essential to take into consideration the relevant literature. This involves the effects of mergers in different countries as well as the different perspective from which researchers have reached to their conclusions regarding whether eventually bank mergers and acquisitions create value and increase performance in the post-merger period. Also, taking into account the recent financial crisis, we will expand the research as to whether mergers could be helpful in preventing severe liquidity risks. In that purpose, we also examine the relevant literature.

Peristiani (1996) analyzed the post-merger performance of US acquiring banks during the period 1980-1990. He investigated the effect of mergers on the efficiency of mergers survivors. More particularly, the study was focused on X-efficiency and scale efficiency. He came to the conclusion that surviving banks presented a small decline in X-efficiency two to four years after the merger. The acquiring banks achieve improvement in scale efficiency and profitability. However, the success of the merger depends on the ability of the surviving banks to avoid any unnecessary increases in non-performing loans and on their ability to re-organize the acquired bank. Finally, banks can achieve the same outcome through internal cutbacks and re-organization.

Akhavein, Berger & Humphrey (1997) examined the efficiency and price effects of mergers using as sample the banking megamergers of the 1980s'. They found that merged banks experienced a 16% average increase in profit efficiency relative to other large banks. Generally, merging banks shift their portfolio mix from securities towards loans as it has been proved that loans' issuance creates more value than securities' purchase. The writers use three hypothesis: under the Diversification Hypothesis, the aforementioned change in mix may be realized because merging banks have improved diversification of risks that allow higher loan/ asset ratio. Under the Relative Efficiency Hypothesis, the acquiring bank tends to push the target bank towards its own level of efficiency enhancing in that way the post-merger efficiency gains. Under the Low Efficiency Hypothesis, the post-merger improvement in efficiency is higher if either or both of the merging banks have low pre-merger efficiency. This happens because the merger event itself may have the effect of giving incentive to management or be used as an excuse for the implementation of important restructuring or other changes which will lead to improved efficiency. They also examined the effects of bank megamergers from the scope of the adjusted returns on assets and equity.

Shih (2000) examined the effects of bank mergers in the aftermath of the Asian financial crisis. The governments heavily encouraged bank mergers so that bank failures could be avoided. However, it is proved that even if one healthy bank merges with a weak bank the risk of bankruptcy is not reduced but increased. The writer concludes that mergers should be conducted on a wholesale basis.

Resti (2000) conducted an analysis using a sample of bank acquisitions in Italy. More specifically, he compared market-based and accounting-based performance indicators. Accounting data are represented mainly by the financial ratios as those are derived by the bank balance sheets, i.e. profitability ratios (net profit/ total equity, net profit/ total assets net operating income/ total equity, net operating income/ total assets), productivity ratios (cost-income ratio, total deposits per employee, total assets per employee), asset quality ratios (loan loss provisions/ total loans, bad loans/ total loans) and capital adequacy ratios (equity/ total assets, free capital/ total assets). The conclusion was that there were positive results concerning financial and operating performance as reflected by accounting data. The market reaction seemed to be stronger for the bidders. However, this reaction does not improve when the acquirer is more efficient than its target.

Wang (2003) researched a new measure of the value added of bank services to estimate the impact of mergers on bank costs and productivity. She found that the use of the book value of financial assets leads to the strange conclusion that bank mergers cause increases in profit but no cost savings or increases in market power. It was also proved that mergers do not create real savings exclusively through the better diversification from the combination of banks' assets.

Carletti, Hartmann and Spagnolo (2003) examined bank mergers from the scope of heterogeneity in banks' sizes and its relation to liquidity risk. They conclude that mergers in general do not lead to a more asymmetric banking system which would deteriorate aggregate liquidity. However, a potential financial consolidation is bound to cause higher liquidity risk if mergers demand a reduction of banks' reserve holdings.

On the other hand, Athanassoglou and Brissimis (2004) examined the effect of M&A's in greek banking on the cost and profit efficiency and on the economies of scale.

Altunbas and Ibanez (2004) studied the recent financial consolidation in the European Union and they analyzed the strategic similarities between bidders and targets on post-merger financial performance, in terms of return on capital. They made the assumption that the allocation of

resources as being showed in the balance sheets reflects the strategic focus of banks. More specifically they examined domestic mergers and they found that similarities in the efficiency and deposits strategies of merging banks lead to enhanced performance during post-merger period. In that purpose they used a variety of financial indicators such as measures of financial performance, asset and liability composition, capital structure, liquidity, risk exposure, financial innovation and efficiency (see table for details). They concluded also that bidders are most cost-efficient than targets while targets have larger loan and non-interest income to total assets ratios. Moreover, it is proved that inconsistencies in earnings, loan and deposit strategies deteriorate the potential post-merger performance. In overall, the writers found that strategic and organizational similarities are significant so that the post-merger financial performance could be improved.

Table 1

Definition	*Symbol*	*Formula*
Performance change	*ΔROE*	Return on equity (post-merger) – weighted return on assets (pre-merger)
Liquidity	*LIQ*	Liquid asset/Total deposit
Cost-income ratio	*COST/INC*	Total cost/Total revenues
Capital-assets ratio	*CA/TA*	Capital/Total assets
Loans-total assets	*LOAN/TA*	Net loans/Total assets
Credit risk	*BADL/INT_INC*	Loan loss provision/Net interest revenues
Diversity earnings	*OOR/TA*	Other operational revenue/Total assets
Off-balance sheet	*OBS/TA*	Off-balance-sheet items/Total assets
Loans to deposits	*LOANS/DEP*	Customer loans/Customer deposits
Other expenses in services and technology	*TECH*	Other expenses/Total assets
Bidder performance	*PREROE_B*	Return on equity of the bidder (pre-merger)
Relative size	*RSIZE*	Total asset of target/Total asset of bidder
Time dummies	*T_DUM*	Yearly time dummies

Source: Altunbas and Ibanez (2004), Mergers and Acquisitions and Bank performance in Europe- The role of strategic similarities

Mylonidis and Kelnikola (2005) examined the financial and operating performance of five merger deals in greek banking sector. Their research was based on analyzing the operating performance during pre and post-merger period using accounting data i.e. ratios such as: profitability ratios (ROA, ROE, Net Profit Margin, Equity Multiplier), operating efficiency ratios (Total Operating Efficiency, Personnel & Management Expenses/ Total Revenues, Personnel & Management Expenses/ Total Expenses), labour productivity ratios (Total Assets/ No of Employees, Net profits No of Employees, No of Employees/ No of Subsidiaries), liquidity ratios (Loans/ Deposits, Cash+ Reserves+ Securities/ Total Assets, Cash+ Reserves+ Securities/ Total Deposits, Credit Risk and

Solvency Ratios (Amount due from customers/ Total Assets, Capital Coverage and Owner's Equity/ Amount due from customers). They also conducted event studies allowing in that way an assessment of the impact of merging activity on value creation for shareholders. The conclusions showed that profit operating efficiency and labour productivity ratios of the bidding do not improve after merger. Liquidity measures are worse in the post merger period. The event study methodology revealed that m&a transactions are on average successful and the create value on a net basis.

Table 2

The following table lists and defines the alternative proxies employed in the analysis.

Performance Indicators	Proxies	Preferred Direction
Profitability	Return on Assets (ROA)=	
	Net income/Total assets	Increasing
	Return on Equity (ROE)=	
	Net income/Total equity	Increasing
	Net Profit Margin (NPM)=	
	Net income/Total Revenues	Increasing
	Equity Multiplier (EM)=	
	Total assets/Total equity	Depends[a]
Operating Efficiency	Total Operating Efficiency (TOE)=	
	Operating expenses/Operating Revenues	Decreasing
	Personnel and Management Expenses/	
	Total Revenues	Decreasing
	Personnel and Management Expenses/	
	Total Expenses	Decreasing
Labour	Total Assets/No. of employees	Increasing
Productivity	Net income/No. of employees	Increasing
	No of employees/No. of subsidiaries	Decreasing
Liquidity	Loans/Deposits	Decreasing
	Cash+Reserves+Securities/	
	Total assets	Increasing
	Cash+Reserves+Securities/	
	Total deposits	Increasing
Credit Risk	Amount due from customers/	
	Total assets	Decreasing
Solvency	Capital Coverage (CC)=	
	Owner's equity/Total assets	Increasing
	Owner's equity/Amount due from	
	customers	Increasing

Source: Mylonidis and Kelnikola (2005), Merging Activity in the Greek Banking System: a financial accounting perspective

Koetter, Bos, Heid, Kool, Kolari and Porath (2006) found that the size of the financial institutions is a very important factor which determines the role that a merging bank assumes in a merger i.e. whether it will be the bidder or the target. They examined both distressed and non-distressed merging banks (the term distressed refers to banks that are closed to failure) and they concluded that the aforementioned types of banks have lower capital reserve ratios than non-merging banks, lower exposure to securities business, higher credit risk and below average efficiency. Additionally, they observed that merger events are bound to happen between banks that demonstrate relatively bad financial profiles. In that framework, it can be proven that a significant proportion of the merger's sample serve the objective to prevent banks from failure. It should be mentioned that the sample refers to the recent consolidation in German banking and it showed that this merger wave was associated with underperforming target and acquirer institutions.

Lausberg and Stahl (2006) researched the non-economic reasons for bank mergers. More precisely, they examined the motives of the decision makers – bank managers based on the theory that managers act as agents for the bank and they want to maximize their own interests as well. Furthermore, they used as criteria of mergers decisions four selected motives: power motive, achievement motive, sensation seeking and prestige motive. The result showed that the aforementioned motives play a significant role in a potential bank merger. Especially even if a merger is likely to have negative economic effects, the managers based on their own interests may disregard them and proceed with a potential merger.

Ashton & Pham (2007) studied 61 UK retail bank mergers with regard to the realized efficiency gains and whether these gains can be transformed into interest rate reductions. The results showed that even though retail bank mergers improved the efficiency of the financial institution during post-merger period, these gains did not lead to reduction in retail interest rates.

Fritsch (2007) studied the long-term effects on target banks of 84 bank acquisitions in 17 countries in Central and Eastern Europe and he compared the post-merger effects on targets being acquired by western banks to those being acquired by banks whose origin is from the developing countries of the aforementioned region. More precisely, the long-term effects refer to profitability, cost efficiency and the advancement of loan portfolios during the 3-year post-merger period. Bidders tend to acquire larger banks, which operate at low cost efficiency level. The researcher concludes that the country from which the acquirer comes affects the post-merger performance. This papers

leads to the result that the target banks that have been acquired by western banks have been benefited more than their domestic competitors.

Table 3

Variable	Description	Definition
t_ROE	Target return on equity	Target return on equity in the year of the transaction (%)
a_ROE	Acquirer return on equity	Acquirer return on equity, average values over the period from the transaction until three years after the transaction (%)
t_CIR	Target cost to income ratio	Target cost to income ratio in the year of the transaction (%)
a_CIR	Acquirer return on equity	Acquirer cost to income ratio, average values over the period from the transaction until three years after the transaction (%)
t_LOANS	Target loans	Size of loan portfolio of the target in the year of the transaction (Mill. Euro)
RELSIZE	Relative size acquirer to target	Log of total assets of the acquirer divided by log of total assets of the target in the year of the transaction
WEST	Westen acquirer	Binary dummy variable: 1 for acquirers from developed western countries; 0 otherwise
CROSS	Cross country transaction	Binary dummy variable: 1 for cross country transactions; 0 for domestic transactions
INCOMETAX	Corporate income tax	De jure corporate income tax in target nation (%)
GDPCAP	Relative GDP per capita acquirer nation to target nation	GDP per capita acquirer nation divided by GDP per capita target nation, average values over the period from the transaction until three years after the transaction (%)
GDPGROWTH	Relative GDP growth acquirer nation to target nation	GDP growth acquirer nation divided by GDP growth target nation, average values over the period from the transaction until three years after the transaction (%)
t_HERF	Herfindahl index target country	Herfindahl index in target country; sum of squares of the total assets divided by the square of the sum of total assets of all banks; average values over the period from the transaction until three years after the transaction, own calculations based on data from BankScope
a_HERF	Herfindahl index acquirer country	Herfindahl index in acquirer country; sum of squares of the total assets divided by the square of the sum of total assets of all banks; average values over the period from the transaction until three years after the transaction, own calculations based on data from BankScope

Source: Fritsch (2007), Long Term effects of effects of Bank Acquisitions in Central and Eastern Europe

Table 4

Characteristics	Acquirer	Targets	Ratio Targets/Bidders
Total assets in Euro, millions			
Mean	188,006.0	1,731.4	0.92%
Standard deviation	213,760.3	3,023.5	
Min.	128.4	10.5	
Max.	969,596.1	14,444.1	
Total equity in Euro, millions			
Mean	7,885.6	162.8	2.06%
Standard deviation	10,583.5	251.8	
Min.	17.0	-8.8	
Max.	71,150.9	1,274.5	
Return on Equity			
Mean	14.6%	1.8%	12.17%
Standard deviation	19.5%	46.4%	
Min.	-64.8%	-199.4%	
Max.	146.6%	141.7%	
Cost-to-income ratio (CIR)			
Mean	62.4%	82.7%	132.53%
Standard deviation	22.8%	54.3%	
Min.	-90.7%	10.8%	
Max.	110.0%	296.3%	

Source: Fritsch (2007), Long Term effects of effects of Bank Acquisitions in Central and Eastern Europe

Anthony Rezitis (2007) studied the efficiency and productivity effects of bank mergers in the greek banking industry. The purpose of this paper was to examine the effect of mergers on the technical efficiency and total productivity during the period 1993-2004 in comparison with the non-merged banks and the post-merging period. The results of this analysis were negative since merged banks experienced a decline in technical efficiency and productivity.

Table 5

Merger activity examined in the present study

Year	Acquirer bank	Target bank
1997	EFG Eurobank	Interbank
1997	Piraeus Bank	Chase Manhattan [a]
1998	National Bank of Greece	National Estate Bank
1998	Piraeus Bank	Credit Lyonnais Greece
1999	Bank of Athens [b]	Eurobank
1999	Piraeus Bank	Nat. Westminster Bank [a]
1999	Bank of Central Greece [c]	Egnantia Bank
1999	EFG Eurobank	Bank of Crete
2000	Alfa Bank	Ionian Bank
2000	Piraeus Bank	Macedonia & Thrace Bank
2000	Piraeus Bank	Chios Bank
2000	EFG Eurobank	Ergasias Bank
2001	EFG Eurobank-Ergasias	Telesis Investment Bank
2002	National Bank of Greece	ETEBA

Notes: The year column refers to the year of merger deal completion.

[a] The bank branch located in Greece.

[b] Eurobank is absorbed by the Bank of Athens and the new bank is named EFG Eurobank.

[c] Egnatia Bank is absorbed by the Bank of Central Greece and the new bank is named Egnatia Bank.

Source: Anthony Rezitis (2007),Efficiency and Productivity Effects of Bank mergers: evidence from the Greek banking industry

Bloch (2008) researched the financials of 457 regional saving banks in Germany, which have been involved in 212 mergers between 1994-2006. He examined how bank mergers affect bank revenues. He found that the negative impact of a merger on net operating revenues reaches 3% of pro-forma consolidated banks' results for up to four years post-merger. This is due to organizational diseconomies, the loss of customers and the temporary distraction of management so as to realize the merger. This practically means that the increasingly organizational complexity makes it more difficult for senior management to effectively manage and control day-to-day operations. He also found that negative merger related effects affect bank profitability because mergers don't seem to produce sufficient cost synergies to offset the negative impact on net operating revenues. Finally, he examined whether banks' experience from repeated involvement in mergers have positive results and he found that there are learning effects that help banks to reduce negative outcomes on net operating revenues in future deals but these cannot be completely offset.

Hernando, Nieto & Wall (2008) examined the determinants of bank acquisitions in the European Union during 1997-2004. The purpose of this paper was identify the differences between the banks that were targets against those that were not in the EU during the examined period. They examined both in-country and cross-border deals. The factors they used in their model were target operating performance, capitalization, prospects for future growth, banks' size, banking industry concentration, management incentives, and other target characteristics such as asset quality. Thus, they estimated the probability of being acquired by another bank. The main conclusions were that

larger banks are bound to be acquired by other banks in the same country, underperforming targets are more likely to lead to efficiency gains in a merger, domestic takeovers are less likely to occur in more concentrated markets while cross-border takeovers are possible to happen in such markets. Finally, in cross-border acquisitions inefficient and less profitable banks are not likely to be targets.

It can be identified that the recent literature review does not give unanimous results regarding both the reasons for and the effects of bank mergers and acquisitions. It is worth to be mentioned that the review is based on different countries and different economies. In this paper will be presented an analysis of the causes and the outcomes of past mergers and acquisitions between Greek banks and will be investigated whether a potential merger activity will take place during and after the financial crisis and whether this movement will be beneficial.

2. Theoretical background

2.1 Definitions

Merger: It is a combination of two companies into one larger company. In the pure sense of the term, a merger happens when two firms, often of about the same size, agree to go forward as a single new company rather than remain separately owned and operated. This kind of action is more precisely referred to as a "merger of equals." Both companies' stocks are surrendered and new company stock is issued in its place. In practice, however, actual mergers of equals don't happen very often. Usually, one company will buy another and, as part of the deal's terms, simply allow the acquired firm to proclaim that the action is a merger of equals. A purchase deal will also be called a merger when both CEOs agree that joining together is in the best interest of both of their companies.

Acquisition: When one company takes over another and clearly established itself as the new owner, the purchase is called an acquisition. From a legal point of view, the target company ceases to exist, and the buyer's stock continues to be traded.

Rationale of a proposed merger

The basis hypothesis of a potential merger is that 2 or more companies combined in one should be more efficient that they are on a standalone basis. A merger should be realized when there is the expectation that the present value of cash flows of the combined firm will be higher or at least equal

to the corresponding present value of cash flows of each firm plus the present value of the potential synergies.

2.2 Types of mergers

Horizontal: Two companies that are in direct competition and share similar product lines and markets.

Vertical: A customer and company or a supplier and company.

Conglomeration: Two companies that have no common business areas.

According to extensive empirical evidence with regards to the merger waves and the efficiency of the deal, it was observed that target stockholders experience an abnormal return between 20% and 43%. On the other hand the acquirer's stockholders either see their returns to be reduced or to be relatively stable. This fact essentially means that they are indications of wealth transfer from the acquirer to the target firm, while the cumulative result of the combined firm is insignificantly positive. However, mergers and acquisitions can indeed create value and can help to successful restructuring of firm, as long as certain conditions are met and the economic environment is favourable.

The key of success is found not only in the characteristics of deal structure and the strategy that is followed during the bid, but also in the consideration that a bid is not a simple transaction but a complete strategic process which should be realized in conjunction with the corporate strategy aiming at creating competitive advantage.

2.3 Deal steps

1. Corporate strategy development: This stage includes the selection of the suitable corporate strategy which has to be in harmony with the strategies of other sectors of the firm.

2. Selection of acquisition strategy: This stage refers to the way, in which the selected strategy will be in effect, that is through the acquisition of another firm. The assessment of the acquired firm should be based on the target strategic fit, so that synergies could be realized and on the value creation produced by the deal.

3. Deal structuring and negotiation: This stage is associated with technical issues concerning the selection of the financial advisors, due diligence of the target firm by the appropriate internal and external auditors, the valuation of the target firm and the determination of bid price range, the

negotiations about the placement of the executives of the target after the creation of the combined firm and finally the development of bid tactics and defense strategies.

4. Post-acquisition integration: It relates to the management of actual problems that arise with the acquisition of the new firm and to the integration of the different organization and information systems.

5. Post-acquisition audit and learning: It refers to the evaluation of what went wrong or right and if eventually the deal is successful or not. This is a very important step and it should not be disregarded.

2.4 Mergers & acquisition's incentives

- Economic Theories

Under these theories it is believed that the incentives of M&As are mainly economic.

1. Profit-maximisation and shareholder's value maximisation: This hypothesis is based on the classical economic approach according to which, firms in order to survive in a competitive environment aim at profit maximization. Therefore, management considers that acquisitions are an investment plan which has to be judged according to its Net Present Value. If this is positive the shareholder's wealth is maximized. This maximization can be produced by efficiency gains or increase in market power of the combined firm which leads to the creation of monopoly profits.

The increased efficiency can be achieved through the creation of synergies:

- Operational synergies: They can be derived from economies of scale, economies of scope and economies of learning. Economies of can usually be realized in horizontal mergers, while economies of scope / learning can be found in vertical or conglomerate mergers.
- Managerial synergies: These result from more effective exploitation of management capabilities of both firms or from the replacement of an inefficient management team of the target firm.
- Financial synergies: They can come from the increased debt capacity which derives from differences in debt ratios of the firm involved in the deal or from the low correlation of the cash flows which in turn decreased the bankruptcy risk. Moreover, they are favored by the existence of excess cash flow for bidder's side and the existence of investment / growth opportunities for the target side. Finally, such synergies can be produced by the potential tax savings that can be realized either from tax incentives or from loss transfer which will provoke effective tax rate reduction.

2. Information Asymmetries Hypothesis: Mergers are caused due to different valuations of the targets which are a consequence of information asymmetry among the market participants. Thus, the fact that can be used as an incentive for an acquirer to make a bid is its belief that, according to inside information, the target may be undervalued and therefore, by proceeding to the deal can exploit the target's capabilities. The fact that a bidder's valuation is higher than the market signals to the market that the fair value of the target is higher and hence there is a higher profit margin. This partially explains why the target stock price continues to increase even if the bid is not successful.

3. Economic Disturbance Theory / Market Overreaction Hypothesis: It explains the phenomenon of merger waves. According to this theory, markets tend to overreact to the announcements concerning bad or favorable information on a micro – macro economic basis.

4. Games Theory: It concerns the analysis of the optimal decision making when all the decision makers act rationally each of them tries to guess the decisions of the other. Therefore, it is described how firms react to possible movements of competitors and in that way can be explained the waves of horizontal mergers, such those that occurred in the Greek banking sector.

- Managerial Theories:

These theories are based on the situation that dominates in markets which perfect competition does not exist. This leads to the reality where management intends to increase the firm's size rather than maximize firm's profits.

1. Agency Problem: This problem occurs due to the fact that the agents (managers) and the stockholders are not the same. Thus, it is likely that the aforementioned teams have different purposes and conflicting interests. Consequently, stockholders need to spend funds in monitoring costs to effectively control managers. This problem gets worse when managers do not possess stocks of the firm and thus, they tend to increase the size of the firm so that they could increase their salaries, bonuses and impact on the firm. Additionally, the existence of Free Cash Flows in managers' hands means that managers may proceed to acquisitions instead of distributing high dividends and they may reduce the firm value. This is the reason why sometimes bid announcement lead to decline to bidder's stock price.

2. Hubris Hypothesis: This theory developed with the purpose to explain the negative returns that are observed in bidder's stock during the acquisition period. It is believed that bidder's managers

tend to overpay for acquisitions due to their excessive optimism and over-confidence on their abilities.

- Finance Theories:

The promotion of the profit maximization under the constraints that are placed by the management hubris is undertaken by the market itself.

1. Market for Corporate Control: There is a corporate control mechanism that dominates in a competitive market. This theory implies that when managers take decisions that are against the stockholders and thus the stock price declines, then the market itself through the acquisition process replaces the ineffective management team or gives them the chance of improving their performance if they manage to stay in the new firm.

2. Real Options Theory: The implementation of an acquisition is similar to the purchase of a call option on the assets of the firm while on the other hand the divestment is similar to a put option on the same assets.

- Strategic Management Theories:

The decision regarding an acquisition is the outcome of the selection of the optimal corporate strategy in accordance with the overall strategic purposes of the firm. Thus, the acquisition process participates in the creation of the competitive advantage of a company.

- Organizational & Behavioral Theories:

They state that management's decisions are not absolutely rational which are subject to several psychological pressures as in an company different people with different expectations, judgments and priorities with regards to an acquisition. Nevertheless, takeovers lead to radical changes and create fear and resistance from personnel and management perspective.

2.5 Factors that affect the M&A's performance

These factors can be distinguished into long-term and short-term. Long-term factors involve the decision for a merger as the part of a whole corporate strategy which aims at the creation of competitive advantage or the enhancement of an existing. These are:

- The correlation of the activities of the companies that are involved in the merger, i.e. whether the merger is horizontal, vertical or conglomeration. Many academics support the view that profits are higher in the case of related activities mainly due to the existence of operational synergies and operational efficiency. However, another team of academics consider that conglomerations create significant value due to either managerial synergies or financial synergies which are created by the low correlation of the cash flows. Moreover, in many mergers where the activities seemed to be unrelated, there were significant gains from the managers' experience, the technological know-how and efficient marketing.
- The economic cycle of the sector, i.e. whether the sector is growing, matured or declining.

The short-term factors are related to the conditions under which the bid will take place, several bidder and target tactics and the way the deal will be structured. These are:

- Mood of the bid: Whether the bid is friendly or hostile. Hostile bids are related to higher returns for the target's stockholders.
- Type of bid: The bid can be realized through a tender offer (direct bid to the stockholders) or a merger (arrangements between the management teams). Studies have shown that tender offer dominate in M&A practice.
- Type of payment: It may be cash, equity or combination of both. Bids that are settled by cash offer higher returns to the stockholders.

Moreover, if bidder has already acquired a stake of target's stocks, then the target returns decreases while bidder's return increases. If institutional investors have acquired block of stocks in the target during the bid period, then target's shareholders' gains are declined due to the effective control that is exercised by the institutional investors. Furthermore, the existence of more than one bidder increases the potential returns of target's shareholders. Finally, important role plays the size of the bidder in comparison with the target's size. The market reacts positive when the target's size is relatively smaller than that of bidder.

2.6 Management entrenchment hypothesis versus stockholder interests hypothesis

The management entrenchment hypothesis proposes that nonparticipating stockholders experience reduced wealth when management takes action to deter attempts to take control of the corporation. This theory asserts that managers of a corporation seek to maintain their positions through the use of active and preventative corporate defenses. According to that, stockholder wealth declines in response to a reevaluation of firm's stock by the market.

The shareholder interest hypothesis implies that stockholder wealth rises when management takes actions to prevent changes in control. The fact that management does not need too devote resources to preventing takeover attempts is considered a cost savings. Such cost savings might come in the form of management time efficiencies savings, reduced expenditures in proxy fights, and a smaller investor relations department. The shareholder interests hypothesis can also be extended to show that antitakeover defenses can be used to maximize shareholder value through the bidding process. Management can assert that it will not withdraw the defenses unless it receives an offer that is in shareholders' interests.

2.7 Preventative antitakeover measures

Companies have considered and developed a plan of defense in the event that the company becomes the target of a hostile bid. Some of these plans are directed at reducing the value that the bidder can find in the firm. The value-enhancing characteristics of a target include features such as high and steady cash flows, low debt levels and low stock price relative to the value of the firm's assets. The presence of these factors may make a firm vulnerable to a takeover. Therefore, some preventative measures are designed to alter these characteristics of the firm in advance, or upon completion of a hostile takeover, so that the financial incentive a raider might have to acquire the target is significantly reduced.

Types of Preventative Antitakeover Measures

- *Poison Pills*: these are securities issued by a potential target to make the firm less valuable in the eyes of a hostile bidder. There are two general types of poison pills: flip- over and flip- in.

Flip-over poison pills have the drawback that they are effective only if the bidder acquire 100% of the target. They are not effective in preventing the acquisition of a controlling but less than 100% interest in the target. Flip-in poison pills were an innovation designed to deal with the problem of a bidder who was not trying to purchase 100% of the target.

Flip-in provisions allow holders of rights to acquire stock in the target, as opposed flip-over rights, which allow holders to acquire stock in the acquirer. The flip-in rights were designed to dilute the target company regardless of whether the bidder merged the target into his company. They can be effective in dealing with raiders who seek to acquire a controlling influence in a target while not even acquiring majority control. The presence of flip-in rights makes such controlling acquisitions very expensive.

- *Poison Puts*: they involve an issuance of bonds that contain a *put option* exercisable only in the event that an unfriendly takeover occurs. A put option allows the holder to sell a particular security to another individual or firm during a certain time period and for a specific price. The issuing firm hopes that the holders' cashing of the bonds, which creates large cash demands for the merged firm will make the takeover prospect most unattractive. If the acquiring firm can convince bondholders, however, not to redeem their bonds, these bond sales may be avoided. In addition, if the bonds are offered at higher than prevailing interest rates, the likelihood of redemption will not be as high.

- *Corporate Charter Amendments*: changes in the corporate charter are common antitakeover devices. Corporate charter changes generally require shareholder approval. Only in extreme cases of poor management performance stockholders actively resist antitakeover amendments. This is partly because management is generally much more organized in its lobbying efforts than those shareholders who may oppose the proposed charter changes.

Some of the more common antitakeover corporate charter changes are:

- ✓ Staggered terms of the bond of directors
- ✓ Supermajority provisions
- ✓ Fair price provisions
- ✓ Dual capitalizations

- *Staggered Board Amendments*: the staggered board defense varies the terms of the board of directors so that only a few, such as one-third, of the directors may be elected during any given year. This may be important in a takeover battle because the incumbent board may be made up of members who are sympathetic to current management. Indeed, boards may also contain members of management. When a bidder has already bought majority control, the staggered board may prevent him from electing managers who will pursue the bidder's goals for the corporation, such as the sale of assets to pay down the debt incurred in the acquisition process. Staggered boards require shareholder approval before they can be implemented.

- *Dual Capitalization*: dual capitalization is a restructuring of equity into two classes of stock with different voting rights. This equity restructuring can take place only with shareholder approval. From an antitakeover perspective, however, the purpose of dual capitalization is to give greater voting power to a group of stockholders who might be sympathetic to management's view. Management often increases its voting power directly in a dual capitalization by acquiring stock with greater voting rights. A typical dual capitalization involves the issuance of another class of stock that has superior voting rights to the current outstanding stock. The stock with the superior voting rights might have 10 or 100 votes for each share of stock. This stock is usually distributed by the issuance of superior voting rights stock to all stockholders. Stockholders are then given the right to exchange this stock for ordinary stock. Most stockholders choose to exchange the supervoting rights stock for ordinary stock because the super stock usually lacks marketability or pays low dividends.

- *Golden Shares*: with the privatization of many state-owned companies, some governments are reluctant to totally embrace the free market ownership of these enterprises. Some governments resorted to golden shares, which are shares that are owned by the government that give the government certain control, such as in the form of significant voting rights,

over the companies once they are privatized. Governments have claimed that this is necessary, particularly when they see there are strategic interests at stake and they fear those interests would be compromised if some outside shareholders gained control of the businesses.

- *Golden Parachutes*: golden parachutes are special compensation agreements that the company provides to upper management. The word *golden* is used because of the lucrative compensation that executives covered by these agreements receive. They may be used in advance of a hostile bid to make the target less desirable, but they may also be used in the midst of a takeover battle. It should be kept in mind, particularly for large takeovers, that the golden parachute payments are a small percentage of the total purchase price. This implies that the antitakeover effects of these benefits may be relatively small. A typical golden parachute agreement provides for lump-sum payments to certain senior management on either voluntary or involuntary termination of their employment. This agreement is usually effective if termination occurs within one year after the change in control. The agreements between the employee and the corporation may have a fixed term or may be an *evergreen* agreement, in which the term is one year but is automatically extended foe an additional year if there is not a change in control during a given year.

2.8 Active antitakeover defenses

- *Greenmail*: the term *greenmail* refers to the payment of a substantial premium for a significant shareholder's stock in return for the stockholder's agreement that he or she will not initiate a bid for control of the company. Greenmail is a form of *targeted share repurchases.*

- *Standstill Agreements*: a standstill agreement occurs when the target corporation reaches a contractual agreement with a potential acquirer whereby the would-be acquirer agrees not to increase its holdings in the target during a particular time period. Such an agreement takes

place when the acquiring firm has established sufficient stockholdings to be able to pose a threat to mount a takeover battle for the target. Many standstill agreements are accompanied by the target's agreement to give the acquirer the right of first refusal in the event that the acquirer decides to sell the shares it currently owns.

- *White Knights*: when a corporation is the target of an unwanted bid or the threat of a bid from a potent acquirer, it may seek the aid of a *white knight*- that is, another company that would be a more acceptable suitor for the target. The white knight will then make an offer to buy all or part of the target company on more favorable terms than those of the origin bidder. These favorable terms may be a higher price, but management may also look for a white knight that will promise not to disassemble the target or lay off management or other employees. The incumbent managers of the target maintain control by reaching an agreement with the white knight to allow them to retain their current positions. They may also do so by selling the white knight certain assets and keeping control of the remainder of the target. A target company may find a white knight through its own industry contracts or through the assistance of an investment banker who will survey potential suitors.

- *White Squire Defense*: in the white squire defense, however, the targets company seeks to implement a strategy that will preserve the target company's independence. A *white squire* is a firm that consents to purchase a large block of the target company's stock. The stock selected often is convertible preferred stock. The convertible preferred shares may be already approved through a blank check preferred stock amendment of the company's charter. The white squire is typically not interested in acquiring control of the target. From the target's viewpoint, the appeal is that a large amount of the voting stock in the target will be placed in the hands of the company or investor who will not sell out to a hostile bidder.

- *Lockup Transactions*: a lockup transaction is similar to a white squire defense. The target is selling assets to another party instead of stock. In a lockup transaction, the target company sells assets to a third party and thus tries to make the target less attractive to the bidder. The target often sells those assets it judges the acquirer wants most. This may also come in the form of lockup options, which are options to buy certain assets or stock in the event of a change in control.

- *No-Shop Provisions*: No-Shop provisions are the agreements that may be part of an overall acquisition agreement or letter of intent in which the seller agrees not to solicit or enter into

negotiations to sell to other buyers. Targets may try to reach such an agreement with a white knight and use the existence of the no-shop provision as the reason they cannot negotiate with a hostile bidder.

- *Capital Structure Changes*: a target corporation may initiate various changes in its capital structure in an attempt to ward off a hostile bidder. These defensive capital structure changes are used in four main ways:
  - ✓ Recapitalize
  - ✓ Assume more debt: a) bonds, b) bank loan
  - ✓ Issue more shares: a) general issue, b) white squire, c) employee stock option plan (ESOP)
  - ✓ Buy back shares: a) self-tender, b) open market purchases, c) targeted share repurchases

- *Pac-man Defense*: it occurs when the target makes an offer to buy the raider in response to the raider's bid for the target. Because of its extreme nature, this defense is considered a "doomsday machine".

3. Empirical analysis

In this part two methods of analysis will be presented: *the operating performance of the merged banks in the pre-merger period and the market reaction in the announcement of the merger event*. The sample of the research includes the most significant mergers in the Greek Banking Sector over the last ten years.

Table 6

Announcement Date	Acquirer	Target
29/3/1999	Alpha Bank	Ioniki Bank
9/6/1999	Eurobank	Ergobank
20/12/1999	Piraeus Bank	Macedonia & Thrace Bank
20/12/1999	Piraeus Bank	Chios Bank
9/6/1999	Eurobank	Telesis Investment Bank
23/03/2006	Marfin Investment Group	Egnatia Bank

Date source: ThomsonOne Database

The operating performance of the merged banks in the pre-merger period

The general methodology of the operating performance studies is to compute some performance ratios composed of variables indicating bank profitability, operating efficiency, employee productivity, liquidity, credit risk and capital adequacy. The sample includes ratios calculated for the two-year period prior to the merging activity (announcement date) for each bank, based on data provided by the financial statements, as well as the mean, the median and the standard deviation for this period.

More specifically, profitability ratios (*ROE, ROA, net profit margin and diversity earnings*) are the most important since they illustrate the ability of a bank to generate profits from either its assets or the equity. Operational efficiency ratio (*other expenses in services and technology ratio*) accounts for the potential reductions in operating expenses. Liquidity ratio (*loans / total assets ratio*) points out the ability of a bank to meet its short-term liabilities. Finally, capital adequacy ratios (*capital / assets ratio, capital coverage)* picture banks' viability in the long run and define their solvency. A detailed description of the ratios is stated below:

✓ **Capital – assets ratio:** A bank's capital-to-asset ratio is a measure for determining how much capital it needs as a safety cushion against credit risks:

$$\frac{Capital}{TotalAssets}$$

✓ **Loans – total assets ratio:** The loans to assets ratio determines the total loans outstanding as a percentage of total assets. The higher this ratio indicates a bank is loaned up and its liquidity is low. The higher the ratio, the more risky a bank may be to higher defaults:

$$\frac{NetLoans}{TotalAssets}$$

✓ **Diversity earnings:** They refer to the ability of management to generate earnings which are created by secondary activities of the bank, cost reduction and efficient management:

$$\frac{OtherOperational\ \mathrm{Re}venues}{TotalAssets}$$

✓ **Other expenses in services & technology:** These expenses include the costs that are related to technology and innovation i.e. total costs excluding interest, staff and other payments. This ratio is calculated as a proportion of total assets and shows the intensity of investment in new technology and systems.

$$\frac{OtherExpenses}{TotalAssets}$$

✓ **Return on total assets (ROA):** The return on total assets measures the overall effectiveness of management in generating profits with its available assets. The higher this ratio is , the better:

$$\frac{NetIncome}{TotalAssets}$$

✓ **Return on equity (ROE):** This ratio measures the return earned on the shareholder's investment in the bank. Generally, the higher this return, the higher the potential gains for the shareholders:

$$\frac{NetIncome}{TotalEquity}$$

- ✓ **Net profit margin (NPM):** The net profit margin refers to the net income as a percentage of total revenues:

$$\frac{NetIncome}{Total\ \mathrm{Re}venues}$$

- ✓ **Capital Coverage:** this ratio shows how many times owner's equity covers total assets. It is preferable that this ratio moves upward:

$$\frac{Owner'sEquity}{TotalAssets}$$

- ✓ **Relative size:** This ratio demonstrates the proportion of sizes between bidder and target:

$$\frac{TotalAssetOfT\ \mathrm{arg}et}{TotalAssetOfBidder}$$

Alpha Bank- Ioniki Bank

According to the Table 6, the announcement date for this merger was 29/03/1999, so the data used refer to year ended 1997, 1998.

Table 7

Ratios	1997		1998	
	Alpha	Ioniki	Alpha	Ioniki
capital- assets ratio	0,080	0,043	0,087	0,037
loans -total assets ratio	0,419	0,445	0,446	0,378
diversity earnings	0,010	0,007	0,009	0,010
other expenses in services and technology	0,009	0,008	0,008	0,010
ROA	0,017	0,002	0,017	-0,014
ROE	0,217	0,039	0,194	-0,373
net profit margin	0,158	0,017	0,166	-0,107
capital coverage	0,066	0,043	0,069	0,036
relative size	0,635		0,418	

Data source: Datastream

Eurobank - Ergobank

The announcement date for this merger was 09/06/1999, so the data used refer to year ended 1998, 1999.

Table 8

Ratios	1998		1999	
	Eurobank	Ergobank	Eurobank	Ergobank
capital- assets ratio	0,124	0,089	0,132	0,138
loans -total assets ratio	0,480	0,430	0,556	0,690
diversity earnings	na	0,004	0,006	0,019
other expenses in services and technology	na	0,006	0,013	0,009
ROA	0,006	0,024	0,014	0,033
ROE	0,047	0,275	0,106	0,238
net profit margin	0,042	0,209	0,100	0,244
capital coverage	0,122	0,073	0,115	0,121
relative size	1,184		0,779	

Data source: Datastream

Piraeus Bank – Macedonia & Thrace Bank

The announcement date for this merger was 20/12/1999, so the data used refer to year ended 1998, 1999.

Table 9

Ratios	1998		1999	
	Piraeus	Macedonia	Piraeus	Macedonia
capital- assets ratio	0,074	0,084	0,141	0,209
loans -total assets ratio	0,554	0,602	0,581	0,556
diversity earnings	0,001	0,001	0,000	0,001
other expenses in services and technology	0,014	0,011	0,017	0,010
ROA	0,011	0,001	0,018	0,007
ROE	0,151	0,010	0,125	0,034
net profit margin	0,087	0,007	0,131	0,065
capital coverage	0,043	0,084	0,078	0,209
relative size	0,495		0,302	

Data source: Datastream

Piraeus Bank – Chios Bank

The announcement date for this merger was 20/12/1999, so the data used refer to year ended 1998, 1999.

Table 10

Ratios	1998		1999	
	Piraeus	Chiosbank	Piraeus	Chiosbank
capital- assets ratio	0,074	0,057	0,141	0,124
loans -total assets ratio	0,554	0,704	0,581	0,570
diversity earnings	0,001	na	0,000	na
other expenses in services and technology	0,014	na	0,017	na
ROA	0,011	0,010	0,018	0,017
ROE	0,151	0,177	0,125	0,138
net profit margin	0,087	0,086	0,131	0,139
capital coverage	0,043	0,055	0,078	0,117
relative size	0,396		0,253	

Data source: Datastream

Eurobank – Telesis Investment Bank

The announcement date for this merger was 20/12/1999, so the data used refer to year ended 1998, 1999.

Table 11

Ratios	1999		2000	
	Eurobank	Telesis	Eurobank	Telesis
capital- assets ratio	0,132	0,258	0,137	0,254
loans -total assets ratio	0,556	0,770	0,605	0,636
diversity earnings	0,006	0,026	0,001	0,007
other expenses in services and technology	0,013	0,025	0,012	0,014
ROA	0,014	0,057	0,012	0,021
ROE	0,106	0,220	0,087	0,081
net profit margin	0,100	0,400	0,103	0,224
capital coverage	0,115	0,256	0,112	0,228
relative size	0,109		0,062	

Data source: Datastream

Marfin investment group – Egnatia Bank

The announcement date for this merger was 23/03/2006, so the data used refer to year ended 2004, 2005.

Table 12

Ratios	2004		2005	
	MIG	Egnatia	MIG	Egnatia
capital- assets ratio	0,376	0,119	0,407	0,179
loans -total assets ratio	0,391	0,869	0,512	0,873
diversity earnings	0,004	0,001	0,001	0,002
other expenses in services and technology	0,062	0,011	0,040	0,008
ROA	0,017	0,005	0,018	0,005
ROE	0,044	0,039	0,044	0,030
net profit margin	0,206	0,066	0,273	0,081
capital coverage	0,248	0,097	0,129	0,087
relative size	3,032		2,078	

Data source: Datastream

Furthermore, the effect of mergers on a broader base should be examined. In that scope, the mean and the median of the aforementioned ratios for all the mergers are calculated.

For a data set, the *mean* is the sum of the observations divided by the number of observations. The mean of a set of numbers x_1, x_2, ..., x_n is typically denoted by $\bar{x}$, pronounced "x bar" and describes the central location of the data. In statistics a *median* is described as the number separating the higher half of a sample, a population, or a probability distribution, from the lower half. It can be found by arranging all the observations from lowest value to highest value and picking the middle one. If there is an even number of observations, the median is not unique, so one often takes the mean of the two middle values.

Table 13 – Two years before merger

Ratios	Mean		Median	
	Aquirers	Targets	Aquirers	Targets
capital- assets ratio	0,1572	0,1084	0,124	0,0865
loans -total assets ratio	0,48	0,6367	0,48	0,653
diversity earnings	0,00525	0,015	0,005	0,007
other expenses in services and technology	0,0245	0,0122	0,0135	0,011
ROA	0,0238	0,0165	0,017	0,0075
ROE	0,113	0,1267	1,106	0,108
net profit margin	0,1186	0,13	0,1	0,076
capital coverage	0,1188	0,1658	0,115	0,0905

Table 14- One year before merger

Ratios	Mean		Median	
	Aquirers	Targets	Aquirers	Targets
capital- assets ratio	0,1808	0,1568	0,137	0,1585
loans -total assets ratio	0,54	0,617	0,556	0,603
diversity earnings	0,0034	0,0078	0,001	0,007
other expenses in services and technology	0,018	0,0102	0,013	0,01
ROA	0,0158	0,0115	0,017	0,012
ROE	0,1112	0,0246	0,106	0,0575
net profit margin	0,1546	0,10767	0,131	0,11
capital coverage	0,1006	0,133	0,112	0,119

In spite of the fact that clear and robust results cannot be derived from the tables above, certain ratios could be used for comparison of acquirers and targets during the pre-merger period. It can be observed that ROE of targets is higher that the ROE of acquirers, fact may partially explain the incentive for the forthcoming deals. On the other hand, acquirers demonstrate a higher ROA which implies that they make more effective use of their assets possibly due to experienced management and better placement in the market. It is worth to be mentioned that the loan to total assets ratio of targets is significantly higher which means that the targets showed higher leverage than the acquirers.

However, in Table 7 it can be noticed that the target (Ioniki Bank) has negative ROE, ROA and Net Profit Margin. These figures are derived using the net income which in this particular case is negative, i.e. the bank annual loss in its balance sheets. Nevertheless, Ioniki Bank was not rejected as a target. The reasons can be attributed mainly to the extensive branch network of the target bank, the reputation of the bank which were coinciding with the strategic objectives of the acquirer bank.

A detailed analysis of the theoretical background, the strategic issues and the factors that had driven the aforementioned mergers and acquisitions will be presented in the next parts.

4. Event Study Analysis (Abnormal Return Methodology)

This method is based on the estimation of the merger effect upon the shareholders' wealth for both the bidder and the target company. The abnormal return methodology involves the comparison of the actual and expected stock returns of the engaged parties during the period of the bid announcement. The difference between the actual and the expected return is defined as the Abnormal Return (AR):

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

j : sample stocks

t: days before / after the announcement date

R_{jt} = actual return

$E(R_{jt})$= expected return

Advantages of abnormal returns methodology

This method became popular because:

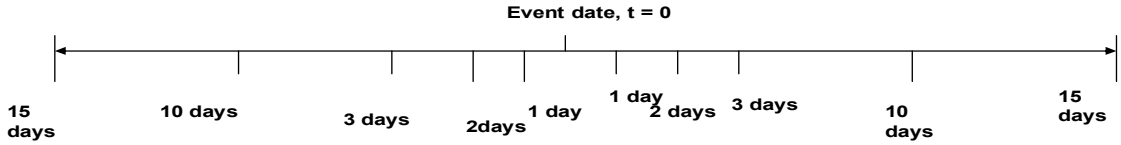
- Extensive sample can be used and results can be extracted for many variables.
- Varying accounting methods with regards to the firm profitability can be isolated.
- There is the possibility for the isolation for any significant event if the observation period is short, i.e. 2 – months.

Disadvantages of abnormal returns methodology

- It depends on the supposed market efficiency, a hypothesis that is crucial for the accurate stock price estimation.
- It depends on Capital Asset Price Model which has been severely criticized for its ability to explain market risk by using beta.
- It is subject to the selection of the right benchmark to which is related the stock price movement in the past. Thus, this method cannot account for the size effect anomaly of small capitalization stocks.
- It is sensitive to the volatility of stock returns and risk.
- It is subject to thin trading problem of small capitalization stocks.
- It does not analyze in depth the firm size after the merger.

The exact date of the deal announcement is called the event day and it corresponds to $t = 0$. The time line below shows the examined period:

Figure 1 - Timeline



The calculation of the actual returns is based on the closing stock prices. In this research, the expected return $E(R_{jt})$ is defined as the return of the Athens Exchange General Index for the examined period. The results of the abnormal return methodology are stated below:

Table 15 – Acquirer (announcement date: 29/03/1999)

Alpha bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	21,35%	5,39%	2,68%	8,91%	5,05%	1,13%	-1,84%	-9,46%	16,16%	1,64%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	6,08%	-2,54%	-6,12%	0,24%	-1,84%	0,62%	-3,61%	-10,82%	4,03%	-2,92%
AR=R-IR	15,27%	7,93%	8,80%	8,67%	6,89%	0,51%	1,77%	1,36%	12,13%	4,56%
CAR[-3,3]	28,00%									

Data Source: Datastream

Table 16 – Target

Ioniki Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	30,95%	12,73%	8,73%	8,15%	0,33%	-2,17%	-9,99%	-17,19%	-18,27%	-26,13%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	6,08%	-2,54%	-6,12%	0,24%	-1,84%	0,62%	-3,61%	-10,82%	4,03%	-2,92%
AR=R-IR	24,86%	15,27%	14,85%	7,91%	2,18%	-2,79%	-6,38%	-6,37%	-22,30%	-23,21%
CAR[-3,3]	9,39%									

Data Source: Datastream

Judging from the results that are showed in Tables 15, 16 it can be observed that both the acquirer and the target bank created positive abnormal returns for the time period [-3,3]. Moreover, the same can be stated for the time period 10 and 15 days prior and after the announcement of the deal. However, the abnormal return of the acquirer is significantly higher than this of the target possibly due to the shareholder's expectations for the creation of significant synergies. Alpha Bank's objective was the enhancement of its market share in a continuously changing and competitive environment. Thus, the management decided to take over Ioniki Bank (51%). Ioniki Bank's branch network was extensive and thus Alpha Bank became the second largest bank in Greece. Alpha gained access to the large client base of the target and in that way the bank managed to increase its sales and consequently the market share. The improvement in the operational and the financial figures made also Alpha Bank a potential strong player in the next wave of mergers and strategic alliances.

It is worth to be mentioned that Ioniki's revenues represented the 40% of Alpha's revenues. Therefore, there were significant opportunities for further improvement in the combined operational performance. The realized synergies were mainly due to the adaptation of common policies with regards to loans. These synergies involved the increase in revenues and the improvement in productivity as well as the cost savings through the effective control of operational expenses and the improvement in efficiency ratios. Last but not least, the Alpha – Ioniki deal contributed to the upgrade of the credit rating of the combined bank.

Table 17 – Acquirer (announcement date: 20/12/1999)

Piraeus Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	-12,23%	-7,26%	-3,82%	0,74%	-0,12%	0,18%	2,44%	-0,79%	16,32%	5,32%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-13,82%	-8,84%	-7,40%	-3,03%	-3,69%	-1,28%	-0,62%	-4,89%	11,67%	6,36%
AR=R-IR	1,59%	1,58%	3,58%	3,77%	3,57%	1,47%	3,07%	4,10%	4,65%	-1,04%
CAR[-3,3]	19,54%									

Data Source: Datastream

Table 18 – Target

Macedonia & Thrace Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	-13,05%	-4,04%	-3,70%	-0,43%	0,44%	-2,68%	-1,31%	-3,34%	26,18%	5,58%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-13,82%	-8,84%	-7,40%	-3,03%	-3,69%	-1,28%	-0,62%	-4,89%	11,67%	6,36%
AR=R-IR	0,77%	4,80%	3,70%	2,60%	4,12%	-1,40%	-0,68%	1,56%	14,51%	-0,78%
CAR[-3,3]	**9,89%**									

Data Source: Datastream

Table 19 - Target

Chios Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	-11,13%	-6,12%	-2,17%	0,94%	0,00%	-3,01%	-0,21%	-1,15%	25,20%	9,52%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-13,82%	-8,84%	-7,40%	-3,03%	-3,69%	-1,28%	-0,62%	-4,89%	11,67%	6,36%
AR=R-IR	2,69%	2,72%	5,23%	3,97%	3,69%	-1,72%	0,41%	3,75%	13,53%	3,16%
CAR[-3,3]	**15,32%**									

Data Source: Datastream

Tables 17, 18 and 19 demonstrate that all the involved parties enjoyed significant positive abnormal returns. Similarly, the acquirer bank showed higher return than those of the target banks during the examined period. This may be due to the fact that acquirer's shareholders took into consideration potential synergies and the increase in the growth rate of the new bank. It should be mentioned that the takeover premium as well as the way that the deal was financed played significant role in the final market reaction. Nevertheless, the targets' abnormal returns were not trivial and obviously the merger created value for all the players in the transaction.

The merger created a network of 160 branches which placed the Piraeus Bank among the biggest banks in Greece. The installation of new IT system in combination with the operation of the bank's network enabled the more efficient, complete and integrated customer service. At the same time the new bank could offer new products that were tailored to the customer needs. Upon the completion of the deal, the combined bank's shareholders' equity amounted to 350 billion drachmas while the created economies of scale enforced the productivity and the profitability. More specifically, the advantages of the deal could be summarized into the significant reduction in the operating costs and investment expanses as well as into the creation of administrative and operational synergies. Thus, the new bank was better placed in the market so that it could withstand the increasing competition the following years.

Table 20– Acquirer (announcement date: 09/06/1999)

Eurobank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	0,20%	3,96%	4,70%	3,23%	-4,41%	-2,41%	-7,38%	-6,34%	-8,62%	-7,50%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-1,34%	2,37%	-1,40%	-0,35%	-0,49%	-0,04%	-0,48%	-1,16%	-3,03%	1,71%
AR=R-IR	1,54%	1,59%	6,10%	3,58%	-3,92%	-2,37%	-6,90%	-5,17%	-5,59%	-9,21%
CAR[-3,3]	**-8,68%**									

Data Source: Datastream

Table 21-Target

Ergobank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	9,91%	17,56%	16,51%	11,64%	3,37%	-0,17%	-4,20%	-5,77%	-2,34%	5,49%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-1,34%	2,37%	-1,40%	-0,35%	-0,49%	-0,04%	-0,48%	-1,16%	-3,03%	1,71%
AR=R-IR	11,26%	15,18%	17,91%	11,99%	3,85%	-0,13%	-3,72%	-4,61%	0,69%	3,78%
CAR[-3,3]	**25,29%**									

Data Source: Datastream

Table 22-Target

Telesis Investment Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	0,102041	0,083942	-0,03571	-0,00168	-0,00168	0,022727	0,021886	0,043771	0,092593	-0,01684
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	-1,34%	2,37%	-1,40%	-0,35%	-0,49%	-0,04%	-0,48%	-1,16%	-3,03%	1,71%
AR=R-IR	11,55%	6,02%	-2,17%	0,18%	0,32%	2,31%	2,67%	5,54%	12,29%	-3,39%
CAR[-3,3]	**8,85%**									

Data Source: Datastream

Tables 20, 21 and 22 shows what is commonly suggested for acquirers and targets. That is, in short-term acquirer appears to have negative abnormal returns while the target enjoys high positive returns. In other words, Eurobank had a negative short term abnormal return mainly due to the uncertainty of the investors for the outcome of the bid as the bank encountered difficulties in convincing the interested parties from the Ergobank side. As a consequence, Eurobank's management devoted precious time to effectively end the deal for the benefit of its shareholders. On the other hand, Ergobank was a lucrative target due to its devoted client base, its branch network and its expertise to sectors such as trade finance. Therefore,

Eurobank was willing to pay high takeover premium so as to proceed with deal, sending Ergobank's stock price in high levels.

EFG Eurobank Ergasias after the merger occupied 7500 employees, its network included 330 branches , its shareholder equity amounted to 600 billion drachmas, its total assets was 5 trillion drachmas while the fund under management were 7.6 trillion drachmas. The completion of the merger took place in 2002. The benefits from synergies and economies of scale were over 45 billion drachmas on an annual basis. In 2000 the new bank increased its market share by 2%.

Telesis investment bank achieved a moderate positive abnormal return, fact that makes sense due to the nature of its activities. Telesis was involved in brokerage, investment banking and dealing. Thus, Eurobank considered this bank as an ideal supplement to its already existing activities and the management desired to be placed in the market before the growth begins again in the sector of stock exchange and advisory finance. Moreover, Eurobank's management aimed at offering to its clients integrated services in both retail and wholesale banking. Furthermore, the incentive for the acquisition of Telesis was the quality of human capital, which was characterized by their expertise.

Table 23– Acquirer (announcement date: 23/03/2006)

Marfin Investment Group	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	17,35%	14,14%	1,31%	0,93%	1,69%	-0,18%	-2,59%	-4,81%	1,66%	2,03%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	2,11%	3,79%	-0,63%	-0,48%	0,15%	0,24%	-0,82%	-2,26%	2,27%	0,97%
AR=R-IR	15,25%	10,35%	1,94%	1,41%	1,54%	-0,42%	-1,77%	-2,55%	-0,60%	1,06%
CAR[-3,3]	**0,15%**									

Data Source: Datastream

Table 24-Target

Egnatia Bank	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
	2,62%	1,95%	-2,19%	-4,28%	-2,19%	0,64%	0,32%	0,32%	0,64%	0,64%
	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
	2,11%	3,79%	-0,63%	-0,48%	0,15%	0,24%	-0,82%	-2,26%	2,27%	0,97%
AR=R-IR	0,52%	-1,83%	-1,56%	-3,81%	-2,34%	0,40%	1,14%	2,58%	-1,63%	-0,33%
CAR[-3,3]	**-3,59%**									

Data Source: Datastream

Egnatia Bank's management decided to accept Marfin Investment Group as a strategic investor, so that the first could gain a larger market share. In that way, the combined bank was able to afford the increasing competition from the other large banks. Marfin Investment Group gradually acquired Egnatia's stocks reaching a majority percentage of 86,44%. This strategic alliance targeted at creating a medium sized competitive bank, focused on client needs by operating branches in the main Greek cities. This attempt led to a share increase in profits by 130% disregarding the fact that operating expanses advanced by 20% due to the growth of branch network.

The nature of the merger did not create opportunities for significant abnormal returns as the event was already known to the market participants and the acquisition of stocks by Marfin Investment Group was spread during a long period of time. This was due to the fact Marfin Investment Group was already participating in Egnatia Bank as a shareholder. Therefore, Marfin Investment Group presents insignificant abnormal return of 0,15% while Egnatia Bank shows negative abnormal return possibly due to lack of confidence from investors' side. Moreover, it is bound that the acquisition price offered by the bid was not meeting the investors' valuation expectations. However, the strategic purpose for the merger cannot be blamed for this negative abnormal return.

5. Long run performance analysis

Table 25

long run performance	Alpha Bank	Eurobank	Piraeus Bank	Marfin Investment Group
R(0,+66)	4,25%	-25,35%	0,43%	-2,40%
R(0,+126)	38,52%	-9,31%	-9,84%	18,85%

Table 26

Athens Exchange General Index returns during the 4 post-merger periods				
R(0,+66)	14,65%	39,78%	-5,01%	-12,84%
R(0,+126)	71,49%	20,49%	-13,46%	-5,24%

Proceeding with the analysis of acquirers' long run performance, it will be attempted to analyze and evaluate the post-merger outcomes of the deals under examination. This analysis takes into consideration the effects of realized synergies, the market reaction and the economic environment during this particular post-merger period. To begin with, taking into account the results presented in Table 25, it can be observed that Alpha-Ioniki merger was the most successful judging from the returns produced while Eurobank's returns show that the deal with Ergobank and Telesis did not create positive signaling to the market.

More specifically, Alpha –Ioniki merger occurred in the most favourable period of stock market, as during the four-month period after the merger the General Index's return was 71,49%. This fact, does not, at any case, cancel the positive effect of the merger; however it should be taken into consideration because the economic and financial environment should be considered when judging the deals. To move forward, it seems that the attempt of Alpha to create a large bank with strong financials and extensive network was successful while the choice of Ioniki as the target company could be considered as the optimal one for the reasons that were presented above.

With regards to Eurobank – Ergobank – Telesis deal the outcome does not favour the acquirer. Nonetheless, the negative returns cannot be indicative of the success of the deal for a several reasons. To begin with, the merger with Ergobank was not completed until 2002, while the strong opposition coming from Ergobank employees created a strong sentiment of uncertainty to both the market participants and Eurobank shareholders. The acquisition of Telesis Investment Bank did not drastically affect Eurobank's

performance as this firm was acquired to supplement a specific sector concerning the activities of the bank. That is, the purpose of the deal was to better place the bank for the future growth in the sector of capital markets and this fact was not appreciated by the investors during the first months of the post-merger period.

The case of Piraeus Bank with Chios and Macedonia & Thrace is a typical example of how the economic environment, the market sentiment and the period of the timing of the merger affect the long-term outcome. As it can be observed from Tables 25 and 26, Piraeus bank significantly outperformed the General Index, in a period where the market downturn had started to be obvious. Thus, it is not safe to reach to the conclusion that the merger destroyed the firm's value, as the strategic purposes of this deal were ideal and the management's decision followed the merger wave in the Greek banking sector.

MIG – Egnatia deal occurred in different time period as it began in March 2006 and ended in August 2007 where market conditions were not so fierce and extreme as they were in 1999 – 2000. Marfin's long-run performance was better than this of General Index which possibly means that market appreciated this strategic alliance and from the bank's perspective the deal created synergies. These conclusions are further enhanced from the fact that Marfin significantly outperformed the market during the four-month period by 24.19%.

6. Implication from the recent subprime mortgage crisis

The second half of 2008 and the first of 2009 the subprime mortgage crisis hit in a very fierce way the sector of financial institutions. A great number of banks went bankrupt around the world while other banks were at the edge of failure. The lack of confidence among the participants in the interbank market raised at record level the interbank interest rates, bringing financial institutions down to their knees. In United States and Great Britain, several banks were acquired by other which considered being healthier. Inevitably, the crisis affected the Greek banking sector because the banks participated in the interbank market. The increasing borrowing costs put in pressure their balance sheets and thus the rumours for future mergers among Greek banks were spread intensively. During the aforementioned period large institutional investors liquefied their portfolios putting additional pressure in bank's stock prices. Thus, the rumours that in Greek banking sector there is only room for 2 large banks were heard on a daily basis.

Currently, the banking sector can be described as matured, saturated with small growth potential and restricted opportunities. The previous growth in sales are not going to be repeated while the big four banks put their efforts to expand and support their activities in Eastern Europe. Therefore, one cannot preclude the possibility of horizontal mergers with the main purpose of achieving economies of scale and cost reductions as well as managerial synergies. Judging from the collaboration among the banks, it can be derived that the bidder will approach the target with friendly intention and they will not proceed on hostile takeovers.

At the same time, the new provisions of Basel II for increased capital adequacy may serve as an additional incentive for potential friendly mergers among big and small banks. Moreover, the view of the Head of Bank of Greece that banks should considered mergers as a step of their future strategy put additional weight on these expectations. The latest news come from the International Monetary Fund which approved and supports potential mergers among the Greek banks if this can be considered as a solution to the current crisis. But how possible is Greek banks to proceed to friendly mergers, especially when they survived the worst financial crisis and now they have started to go into normal business again?

The answer in this question cannot be definite. It is unlikely that mergers will occur in short-term. This is mainly because bank's executives are currently concerned with the crisis management and

the risk mitigation. Nevertheless, on a medium-to- long-term basis the likelihood of merging activity is high. The merger wave of 1999 – 2000 was marked by the need of banks to get bigger and expand their activities. A potential second merger wave may derive from need of banks to secure their sound financial statements and establish their presence in Eastern Europe.

7. Conclusions

To conclude, the mergers among banks that occurred the last decade in Greece had been driven by the need for growth and branch network expansion. The reason for these motives was the fact that Greek banking sector was not matured and was offering great opportunities for increased profitability. Therefore, the effects of the examined transactions were positive judging from the generated returns during post-merger years. Nowadays, the banking sector has been completely transformed offering new motives for mergers and acquisitions. The challenges that have been put by the global crisis and the changes that will prevail in the regulatory environment will possibly lay the ground for future deals.

8. Appendices

Alpha bank-announcement date 29/03/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
5/3/1999	16,11	3445,52	0,213532	0,053908	0,026786	0,089136	0,05051	0,011253	-0,01841	-0,09463	0,161637	0,016368
12/3/1999	18,55	3750,46										
23/3/1999	19,04	3893,44	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
24/3/1999	17,95	3646,35	0,060827	-0,02543	-0,06122	0,0024	-0,01844	0,006194	-0,03611	-0,10822	0,040311	-0,02925
26/3/1999	18,61	3723,76										
29/3/1999	19,55	3655,1										
30/3/1999	19,77	3677,74										
31/3/1999	19,19	3523,11										
1/4/1999	17,7	3259,55										
12/4/1999	22,71	3802,44										
19/4/1999	19,87	3548,19										

Ioniki Bank-announcement date 29/03/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
5/3/1999	18500	3445,52	0,309459	0,127268	0,087298	0,081473	0,003313	-0,02167	-0,09994	-0,17193	-0,18266	-0,2613
12/3/1999	21490	3750,46										
23/3/1999	22280	3893,44	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
24/3/1999	22400	3646,35	0,060827	-0,02543	-0,06122	0,0024	-0,01844	0,006194	-0,03611	-0,10822	0,040311	-0,02925
26/3/1999	24145	3723,76										
29/3/1999	24225	3655,1										
30/3/1999	23700	3677,74										
31/3/1999	21804	3523,11										
1/4/1999	20060	3259,55										
12/4/1999	19800	3802,44										
19/4/1999	17895	3548,19										

Piraeus Bank -announcement date 20/12/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
29/11/1999	18,64	6021,64	-0,12232	-0,07256	-0,03821	0,007389	-0,00122	0,001834	0,02445	-0,00795	0,163203	0,053178
6/12/1999	17,64	5692,55										
15/12/1999	17,01	5603,89	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
16/12/1999	16,24	5351,49	-0,13822	-0,0884	-0,07398	-0,0303	-0,03688	-0,01283	-0,00624	-0,04893	0,116683	0,0636
17/12/1999	16,38	5388,03										
20/12/1999	16,36	5189,34										
21/12/1999	16,39	5122,75										
22/12/1999	16,76	5156,97										
23/12/1999	16,23	4935,42										
3/1/2000	19,03	5794,85										
10/1/2000	17,23	5519,38										

Macedonia & Thrace Bank-announcement date 20/12/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
29/11/1999	7930	6021,64	-0,13052	-0,04036	-0,03701	-0,00433	0,00437	-0,02683	-0,01305	-0,03336	0,261784	0,055838
6/12/1999	7185	5692,55										
15/12/1999	7160	5603,89	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
16/12/1999	6925	5351,49	-0,13822	-0,0884	-0,07398	-0,0303	-0,03688	-0,01283	-0,00624	-0,04893	0,116683	0,0636
17/12/1999	6865	5388,03										
20/12/1999	6895	5189,34										
21/12/1999	6710	5122,75										
22/12/1999	6805	5156,97										
23/12/1999	6665	4935,42										
3/1/2000	8700	5794,85										
10/1/2000	7280	5519,38										

Chios Bank-announcement date 20/12/1999												
Date	Price	General In	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
29/11/1999	7860	6021,64	-0,11132	-0,06116	-0,02171	0,009393	0	-0,03006	-0,00215	-0,01145	0,251969	0,095204
6/12/1999	7440	5692,55										
15/12/1999	7140	5603,89	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
16/12/1999	6920	5351,49	-0,13822	-0,0884	-0,07398	-0,0303	-0,03688	-0,01283	-0,00624	-0,04893	0,116683	0,0636
17/12/1999	6985	5388,03										
20/12/1999	6985	5189,34										
21/12/1999	6775	5122,75										
22/12/1999	6970	5156,97										
23/12/1999	6905	4935,42										
3/1/2000	8745	5794,85										
10/1/2000	7650	5519,38										

Eurobank - announcement date 10/06/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
20/5/1999	24,88	4309,61	0,00201	0,039616	0,047039	0,032298	-0,0441	-0,02407	-0,07381	-0,06338	-0,08624	-0,07501
27/5/1999	23,98	4153,07										
7/6/1999	23,81	4311,95	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
8/6/1999	24,15	4266,71	-0,01344	0,023746	-0,01398	-0,00352	-0,00486	-0,00037	-0,00482	-0,01164	-0,03032	0,017108
9/6/1999	26,08	4272,44										
10/6/1999	24,93	4251,69										
11/6/1999	24,33	4250,1										
14/6/1999	23,09	4231,18										
15/6/1999	23,35	4202,2										
24/6/1999	22,78	4122,79										
1/7/1999	23,06	4324,43										

Ergobank-announcement date 10/06/1999												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
20/5/1999	9716,66	4309,61	0,099142	0,175563	0,165091	0,116376	0,033681	-0,00172	-0,04198	-0,05774	-0,02341	0,054932
27/5/1999	9085	4153,07										
7/6/1999	9166,66	4311,95	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
8/6/1999	9566,66	4266,71	-0,01344	0,023746	-0,01398	-0,00352	-0,00486	-0,00037	-0,00482	-0,01164	-0,03032	0,017108
9/6/1999	10332	4272,44										
10/6/1999	10679,99	4251,69										
11/6/1999	10661,65	4250,1										
14/6/1999	10231,66	4231,18										
15/6/1999	10063,33	4202,2										
24/6/1999	10430	4122,79										
1/7/1999	11266,66	4324,43										

Telesis Investment Bank-announcement date 10/06/1999												
Date	Price	General Inde	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
20/5/1999	10,78	4309,61	0,102041	0,083942	-0,03571	-0,00168	-0,00168	0,022727	0,021886	0,043771	0,092593	-0,01684
27/5/1999	10,96	4153,07										
7/6/1999	12,32	4311,95	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
8/6/1999	11,9	4266,71	-0,01344	0,023746	-0,01398	-0,00352	-0,00486	-0,00037	-0,00482	-0,01164	-0,03032	0,017108
9/6/1999	11,9	4272,44										
10/6/1999	11,88	4251,69										
11/6/1999	12,15	4250,1										
14/6/1999	12,14	4231,18										
15/6/1999	12,4	4202,2										
24/6/1999	12,98	4122,79										
1/7/1999	11,68	4324,43										

Marfin Investment Group-announcement date 23/03/2006												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
2/3/2006	4,61	4062,87	0,173536	0,14135	0,013109	0,009328	0,016917	-0,00185	-0,02588	-0,04806	0,016636	0,020333
9/3/2006	4,74	3997,03										
20/3/2006	5,34	4174,53	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
21/3/2006	5,36	4168,22	0,021052	0,037871	-0,00626	-0,00476	0,001519	0,00236	-0,0082	-0,02256	0,022679	0,009715
22/3/2006	5,32	4142,11										
23/3/2006	5,41	4148,4										
24/3/2006	5,4	4158,19										
27/3/2006	5,27	4114,37										
28/3/2006	5,15	4054,8										
6/4/2006	5,5	4242,48										
13/4/2006	5,52	4188,7										

Egnatia Bank -announcement date 23/03/2006												
Date	Price	General Index	R(-15,0)	R(-10,0)	R(-3,0)	R(-2,0)	R(-1,0)	R(1,0)	R(2,0)	R(3,0)	R(10,0)	R(15,0)
2/3/2006	6,1	4062,87	0,02623	0,019544	-0,02188	-0,04281	-0,02188	0,00639	0,003195	0,003195	0,00639	0,00639
9/3/2006	6,14	3997,03										
20/3/2006	6,4	4174,53	IR(-15,0)	IR(-10,0)	IR(-3,0)	IR(-2,0)	IR(-1,0)	IR(1,0)	IR(2,0)	IR(3,0)	IR(10,0)	IR(15,0)
21/3/2006	6,54	4168,22	0,021052	0,037871	-0,00626	-0,00476	0,001519	0,00236	-0,0082	-0,02256	0,022679	0,009715
22/3/2006	6,4	4142,11										
23/3/2006	6,26	4148,4										
24/3/2006	6,3	4158,19										
27/3/2006	6,28	4114,37										
28/3/2006	6,28	4054,8										
6/4/2006	6,3	4242,48										
13/4/2006	6,3	4188,7										

	Alpha Bank	Eurobank	Piraeus Bank	Marfin Investment Group
p(0)	19,55	24,93	16,36	5,41
p(+66)	20,38	18,61	16,43	5,28
p(+126)	27,08	22,61	14,75	6,43

General Index	29/3/1999	10/6/1999	20/12/1999	23/3/2006
p(0)	3655,1	4251,69	5109,34	4148,40
p(66)	4190,46	5942,9	4853,17	3615,76
p(126)	6268,15	5122,75	4421,38	3931,05

9. List of References

- Carletti Elena, Hartmann Philipp, Spagnolo Giancarlo (2003) ,"Bank Mergers, Competition and Liquidity", *Working Paper No. 292*

- Koetter M., Bos J .W .B., Heid F., Kolari J. W., Kool C. J. M., Porath D., (2007), "Accounting for distress in bank mergers", *Journal of Banking & Finance*

- Hernando Ignacio, Nieto J. Maria, Wall D. Larry, (2008), "Determinants of Domestic and Cross-Border Bank Acquisitions in the European Union", *Working Paper 2008-26- Federal Reserve Bank of Atlanta*

- Bloch Thomas (2008), "Dissynergies of Mergers among Local Banks", *Working Paper No.192, Working Paper Series: Finance & Accounting*

- Rezitis N. Anthony (2007), "Efficiency and Productivity effects of bank mergers: Evidence from the Greek banking industry", *Economic Modelling 25 (2008) 236-254*

- Fritsch Markus (2007), " Long Term Effects of Bank Acquisitions in Central and Eastern Europe"

- Ashton John, Pham Khac (2007), "Efficiency and Price Effects of Horizontal Bank Mergers", *CCP Working Paper 07-9*

- Lausberg Carsten, Stahl Teresa (2006), "Motives And Non-Economic Reasons For Bank Mergers And Acquisitions" ,*7th Maryland Finance Symposium on Behavioral Finance*

- Mylonidis Nikolaos, Kelnikola Ioanna (2005), " Merging Activity in the Greek Banking System: a financial accounting perspective", *South Eastern Europe Journal of Economics 1 (2005) 121-144*

- Altunbas Yener, Ibanez Marques David (2004), " Mergers and Acquisitions and Bank Performance in Europe: the role of strategic similarities", *European Central Bank, Workink Paper series No.398*

- Wang J. Christina (2003), " Merger – Related Cost Savings in the Production of Bank Services", *Research Department, Federal Reserve Bank of Boston*

- Resti Andrea (2000), " Do bank acquisitions increase shareholders' wealth? A comparison between market-based and accounting-based performance indicators for some Italian banks", *University of Bergamo*

- Shih S. H. Michael (2000), "Banking Sector Crisis and Mergers as a Solution", *national University of Singapore and University of Toronto*

- Akhavein D. Jalal, Berger N. Allen, Humphrey B. David, (1997), " The effects of Megamergers on Efficiency and Prices: evidence from a bank profit function", *Review of Industrial Organization Vol. 12, 1997*

- Peristiani Stavros (1996), "Do Mergers improve the X-efficiency and Scale Efficiency of U.S Banks? Evidence from 1980s", *Federal Reserve of New York, Research Paper No.9623*

- Chapters from *Mergers and Acquisitions Handbook*, Rock Milton (Ed.), 1987, McGraw Hill

- Weston, Mitchel, Mulherin (2004), " Takeovers, Restructuring, and Corporate Governance", *Fourth Edition*

- Sudarsanam S. (2003) "Creating Value from Mergers and Acquisitions: The Challenges. An Integrated and International Perspective, Prentice Hall International, London"

- Cowling K., Stoneman P., Cubbin J., Hall G., Domberger S., & Dutton P. (1980): "Mergers and economic performance", *Cambridge University Press (1980)*

- De Bondt W.F. & Thompson H.E. (1992): " Is economic efficiency the driving force behind mergers?" *Managerial and Decision Economics, 13:31-44*

- Dodd P. & Ruback R. (1977), "Tender offers and stockholders returns. An empirical analysis." *Journal of Economics, 5:351-373*

- Manne H.G. (1965), "Mergers and the market for corporate." *Journal of Political Economy, 3,:110-120*

- Mueller D.C. (1980): "The determinants and effects of mergers: An international comparison. Publication of the Science Center Berlib, 24" *International Institute of Management (1980)*

- Roll R. (1986), "The hubris hypothesis of corporate takeovers." *Journal of Business, 59(2): 197-216*

- http://www.piraeusbank.gr/ecpage.asp?id=236685&nt=78&lang=1
- http://dir.icap.gr/news/index_gr_7048.asp
- http://www.capitallink.com/gcompanies/greece/efgeuro/press/march2001.html
- http://www.tovima.gr/default.asp?pid=2&artid=123189&ct=3&dt=11/06/2000
- http://www.laiki.com/web/w3sr.nsf/Lookup/%CE%91%CE%BD%CE%B1%CE%BA03072007_5.pdf/$file/%CE%91%CE%BD%CE%B1%CE%BA03072007_5.pdf
- http://www.greekmoney.gr/node/5429
- http://www.axiaplus.gr/Default.aspx?id=30404&nt=108&lang=1
- http://www.axiaplus.gr/Default.aspx?id=30404&nt=108&lang=1