EXAMINING BANK MERGERS AND ACQUISITIONS IN GREECE BEFORE THE OUTBREAK OF THE SOVEREIGN DEBT CRISIS

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Abstract

In this study Mergers and Acquisitions (M&As) and business performance of banks in Greece are examined through an accounting approach. Using accounting data (financial ratios), the post-merger performance of a sample of Greek banks, listed on the Athens Stock Exchange that executed at least one merger or acquisition in the four-year-period from 2004 to 2007, is investigated. For the purpose of the study, a set of nineteen ratios is employed, in order to measure banks' operating performance and to compare pre- and post-merger performance for three, two and one year before and after the M&A. The results revealed that M&As had a positive impact on the post-merger performance of merger-involved firms, except of dividend policy, which had to be moderate and conservative, because of the global financial crisis. The results showed that the effect of M&As on sample's business performance, is not direct, but it becomes obvious during the next two years. Last, the number of ratios, which are statistically and significantly changed, is bigger as the control interval widens and the common ratios have an identical variation.

JEL Classification: G34, M40

Keywords: Banks, Mergers, Acquisitions, Financial Ratios, Post-Merger Operating Performance

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1. Introduction

Mergers and Acquisitions (M&As) are mechanisms that attract public interest and one of the most important movements that can change dramatically, in a short time, the value of a firm. They are frequently detected in many branches of business, since they are considered as an option for increasing sales, profits, market share, efficiency and competitiveness. M&As are very important transactions for involved firms, and for their employees, shareholders, competitors, consumers and the whole economy (Pazarskis & Alexandrakis, 2009).

However, M&As do not always contribute to the profitability of firms engaged in them and the improvement of economic performance that occurs, as the final result produced by a M&A activity has been over time an extensive subject of debate and controversy (Mueller, 1989). In the context of this confrontation, M&A activity is often considered that either contribute to improving the economic performance or not, and destroy the value of an investment undertaking involved in M&A activities or could be zero value (Healy et al., 1992; Pazarskis et al., 2009).

Regarding the Greek market, which recently has been upwarded from a developing to a developed economy (Pazarskis et al., 2011), there have been a few studies on M&As, most of which are either questionnaires of the involved firms' executives or event studies based on announcement and completion dates, and there is a scarcity of post-merger performance studies with ratio analysis regarding firms involved in M&As activities, especially in the long run perspective or examining specific industry sectors.

This study focuses on M&As of some Greek banks and financial institutions, that have proceeded in transactions either with banks or investment companies or other supporting financial companies. However, the transactions consider the Greek banking sector in 2004-2007 period (before the 2008 global financial crisis) and even selected domestic M&As and most important in terms of value/importance at the strategic level transactions for the acquiring firms.

In order to examine the post-merger operating performance of Greek banks after M&As activities in this sector, this study proceeds to an analysis of the post-merger performance of a sample of banking firms, listed at the banking sector of the Athens Stock Exchange (ASE) in Greece that executed mergers or acquisitions in the above referred period, using accounting data (financial ratios), and attempts to investigate the M&As effects on their post-merger performance.

Furthermore, as the strategy literature commonly argues that successful M&As are one of the mechanisms by which firms increase revenues and reduce cost, in this study the examined research question, that is if operating performance in the post-merger period is greater than it is in the pre-merger period for Greek banks involved in M&As, is extended with the analysis of two related research questions: if mergers have any impact on the post-merger performance of the acquiring firms at a long run perspective or if there is any difference at a short-term or mid-term perspective.

The structure of the paper is as follows: the following section gives general definitions of M&As, also presents the legal framework & classification of M&As and especially in banking sector in Greece and describes the motivations for M&As. The next section analyses the research design of this study (related past researches, sample and data, selection of variables-financial ratios, research methodology and hypothesis) and the following section presents the results. The last section concludes the paper.

2. Definitions, legal framework, classification and motives of M&As

2.1 Definitions of M&As

The term of "merger" is perceived, in general, as the action of unity from two or more companies. In this study, the terms "merger" and "mergers and acquisitions (M&As)" are used in many cases at the text, providing similar meanings for the terms "merger" and "acquisition", while in others, wherever it is necessary, there is a clear distinction among them and always exists a provision of the exact meaning. To make clear, the perception of each term, they are analysed separately below.

Merger is the act when one or more companies are ceased to exist without going into liquidation, while transfering all their property for a consideration to the shareholders in the new company, which can be either pre-existing or created for this purpose. Depending on the size of the companies, the merger can be characterized as "among equals" (merger of equals) or "merger between unequal" (merger of unequals).

The acquisition is the transfer of all or a majority part of a company (acquired) to another one (acquirer), which pay the corresponding fee. The transfer is usually made in cash and/or purchase and/or exchange of shares (less than 10% of the transaction value in shares) through the stock market (Greek Law 2190/1920).

More specifically, with merger, two companies integrate their operations and are able to achieve a strong competitive advantage. On acquisition, a company (acquirer) purchases entirely (total) or at the highest rate (partial) another company (acquired) turning it into a subsidiary business unit within the portfolio. The acquirer gains control of the management and assets of the other enterprise.

2.2 Legal framework & classification of M&As in Greece

In Greece, the M&As are supervised by the Greek Competition Commission which is a non-profit authority with administrative and financial independence and consists of eleven members. The Greek Competition Commission has the right (either after the request of the Development Minister or its own motion) to examine a particular sector of Greek market and, if it finds that there is no effective competition, can take any absolutely necessary regulatory measure.

According to several regulations published in the Greek Government Gazette, the general legal framework on M&As activities is described by the articles 68-80 of the Law 2190/1920, which concern public companies, limited by shares (S.A.), and were amended by the Presidential Decree 498/1987. M&As activities that concern L.T.D. companies are directly regulated by the Law 3190/1955, and especially, according to the articles 54-55 of this Law. This basic framework is postponed, into some specific areas on M&As, by the Law Decree 1297/1972, and the articles 1-5 of the Law 2166/1993 that are concerning fiscal incentives for the formation of larger companies by mergers. Furthermore, the article 16 of the Law 2515/1997 specifies and enhances the legal process for bank mergers, in accordance to the article 2 of the Law 2076/1992. Also, the Law 2515/1997 surrogates the articles 1-15 of the Law 2292/1953, and there are special provisions and incentives for the concentration of the Greek banking system. In accordance to the Law Decree 1297/1972, and the Law 2166/1993, the Law 2992/2002 provides new incentives for investments and it expands the categories of investments, including the form of international M&As (Pazarskis, 2008).

The type of M&As activity, or how a company can make an M&A and under which exact way can an M&A activity be formed, is possible in three ways in Greece, as it is specified in the above laws:

- merger by absorption, where the acquiring firm retains its name and its identity, and it acquires all of the assets and liabilities of the acquired company; after the merger the acquired firm ceases to exist as a separate business entity,

- merger by consolidation, where an entirely new firm is created; both the acquiring firm and the acquired firm terminate their previous legal existence and become part of the new firm,
- merger by acquisition, where one firm purchase another firm's stock for cash, or shares of stock (but always less than 10% of the transaction value in shares).

Furthermore, according to the correlation of the activities of merged companies, there is always the distinction for M&As activities of three types (Lubatkin, 1983; Pazarskis, 2008):

- horizontal merger, where a company takes over another from the same industry and at the same stage of the production process (Eckbo, 1983),
- vertical merger, where the target is in the same industry as the acquirer, but operating at a different stage of the production chain, either nearer the source of materials (backward integration) or nearer to the final customer (forward integration) (Vernon & Graham, 1971; Perry, 1978),
- conglomerate merger, where the acquiring firm and the acquired firm are apparently unrelated to each other (Lewellen, 1971; Higgins & Schall, 1975).

Last, according to the process and the nature of the negotiations, as well as the agreement of companies' management, if it is pro- or contra-oriented to the M&A action, M&As activities are characterised as:

- friendly or amicable M&As, where the acquirer and the acquired company achieve a common agreement on this specific action, there is a common consensus, and no official reaction on the completion of the process,
- hostile M&As or takeovers, where the target company express in public its disagreement to the M&A action, and attempt to defend itself through some precise actions from the eventual acquirer company.

2.3 M&As of banks in Greece

All the M&As of bank institutions governed by the Law 2515/1997 and 2190/1920. Either by absorption or a new firm, according to Article 68 of the Law 2190/1920. The draft contract and M&A action should be approved by the Boards of Directors of both the merging banks and voted by the General Meetings of shareholders (at least two thirds (2/3) of the shares).

The Development Minister makes the decision approving the merger in accordance with the provisions of the law, preceded the adoption of the merger by the Bank of Greece. Bank institutions merging inform the Bank of Greece, the decisions of the Boards of Directors, accompanied by:

- draft merger agreement and in cases prescribed reports and
- program business for the type and extent of actions and administrative and accounting procedures and internal control procedures of the bank institution creating from the merger.

The completion of the merger requires the approval of the Greek Competition Commission and the Bank of Greece. The second one is which within two months after submission of the above, or within six months for merger by the formation of a new institution, approves or rejects the action accompanied by a reasoned decision.

Reasons for rejection of the Bank of Greece for merger are:

- inadequate organization in terms of administrative, accounting and internal control procedures of the bank institution created from the merger
- failure of the bank in compliance of principles and rules which concern risk or the capital adequacy of bank institutions.

Regulators and supervisors must be ready to ensure that any new banks emerge after a wave of mergers and acquisitions in the Greek banking sector, do not abuse the dominant position would reasonably acquire.

2.4 Causes-Motives of M&As

Over time, there were several considerations and proposals as attempts to interpret the motives leading enterprises in carrying out M&As (Mueller, 1989; Pazarskis et al., 2009). A general framework that categorizes various respects and motivation-causes that led to M&As, has been written by Steiner (1975), and later accepted and developed by many other researchers (Jensen & Meckling, 1976; Firth, 1980; Holderness & Sheehan, 1985; Ravencraft & Scherer, 1987; Sarri, 1996; Pazarskis et al., 2010a).. According to it, several research beliefs can be categorized and analyzed based on the theory of the firm (theory of the firm) into two main approaches: the neoclassical theories and the managerial theories.

The neoclassic theories advocate that the only and main goal of every firm is to maximize profit. They believe that this can be achieved in three ways: (a) through synergy (Chatterjee, 1986; Brush, 1996; etc.), (b) by reducing the risk (risk reduction theory) (Williamson, 1964; Lintner, 1971; Kamien & Schwartz, 1982; Hambrick & McMillan, 1985; etc.) and (c) by creating monopolistic market conditions or increasing the market power of firm (monopoly theory or market power theory) (Boyle, 1972; George & Silberston, 1975; Ghosh, 2001; etc.).

On the other hand, the managerial theories are a way to interpret events of M&As, not directly related to the maximization of profit of a firm. Managerial theories include the "'Hubris or Managerial Hypothesis" and the proponents of this theory separate the interests and beliefs of the management of these owners-shareholders of a company, considering that managers may have different objectives or considerations and for this reason to make a M&A, while this may not actually serve the

interests of their shareholders (Baumol, 1962; McGuire et al., 1962; Marris, 1964; Roll, 1986; Pazarskis et al, 2010a; etc.).

Every research addresses the issue of motivation of M&As is affected by economic conditions, geographical place and the business conditions and for this reason differs from the previous ones (Campbell, 1990; Katsos & Lekakis, 1991; Travlos, 1993; Zanakis & Zopounidis, 1997; etc.). From another perspective, therefore, causes-motives that lead to the realization of a M&A can be categorized in time, in relation to the business goal setting and time for various desired results.

3. Research design

3.1 Related past studies

Many recent studies on accounting and finance revealed that bank M&As transactions have positive, negative or a "zero" result on stakeholders. In Greece, M&As are on average successful, create value on a net basis (Mylonidis & Kelnikola, 2005) and have led to the creation of bigger and stronger banks, with a smaller but less worried about the future number of personnel (Lazaridis, 2003). In India, banks are becoming more focused on their high net interest income activities and the main reasons for their mergers are to scale up their operation (Ravichandran et al., 2010). In Nigeria, the post-mergers and acquisitions' period was more financially efficient than the pre-mergers and acquisitions' period (Okpanachi, 2011). Some past studies on bank M&As performance, haven not supported an improvement in the post-merger performance after the M&As action (Rose, 1987; Boyd & Graham, 1988; Huizinga et al., 2001; Mylonidis & Kelnikola, 2005; and others), while other ones concluded in confronting positive results from the M&As action (Berger & Humphrey, 1991; Cornett & Tehranian, 1992; Athanasoglou & Brisimis, 2004; & others). A summary of past studies worldwide in bank M&As is presented at table 1.

Table 1. A Summary of Studies on Bank M&As

Study	Sample Size	Sample Period	Statistic Used	Findings
Rose (1987)	40 acquiring banks, 138 acquired banks	1970-1980	Paired comparison with t-tests Multiple regression	Acquiring national banks were found to have lower operating efficiency and productivity than non merging banks. Frequency of merger activity did not significantly influence bank profitability or growth, but did augment stockholder risks and increase business and real-estate credit.
Boyd & Graham (1988)	146	1971-1984	One measure of profitability and two measures of risk	There is not an important improvement in the post-merger performance after the M&As action, especially in banks which were big and strong even before their M&As activities.
Berger & Humphrey (1991)	57	1981–1989	Multiple regression	Cost efficiency and profit rates on average, do not improve following merger. Mergers, in which the acquiring banks are more efficient than the acquired, do not lead to efficiency improvements when compared with other mergers or firms.
Cornett & Tehranian (1992)	30	1982-1987	Univariate Regression	Combined banks outperform the banking industry in the post-acquisition period. Their better performance appears to result from improvements in the ability to attract loans and deposits, from employee productivity and from profitable asset growth.
Hadlock, Houston, & Ryngaert (1999)	84	1982-1992	Univariate comparisons	Banks with higher levels of management ownership are less likely to be acquired, particularly in acquisitions where target managers depart from their jobs following the acquisition.
Huizinga, Nelissen & Vennet (2001)	52	1994-1998	Univariate Regression	The cost efficiency of merging banks is positively affected by the merger, while the relative degree of profit efficiency improves only marginally.
Lazaridis (2003)	5	2002-2003	Questionnaire	M&As have led to the creation of bigger and stronger banks in Greece, the decrease in the number of personnel and the improvement of the bank's organizational hierarchy and image. During the M&As, the banks managed to sustain a rather favourable climate towards their employees.
Athanasoglou & Brisimis (2004)	8	1997-2002	Accounting Ratios	M&As have led to improve the effectiveness of profits and costs of banks.
Mylonidis & Kelnikola (2005)	9	1997-2002	Accounting Ratios	Profit, operating efficiency and labour productivity ratios of the bidding and target banks do not improve after merger. Nonetheless, when compared with the corresponding ratios of non-merging banks, merger activity has a positive impact on banks' operating performance and creates value on a net basis.
Ravichandran, Fauzias, & Rasidah (2010)	7	2000-2007	CRAMEL-type variables	The mergers did not seem to enhance the productive efficiency of the banks as they do not indicate any significant difference. The main reason for merger is to scale up their operations.
Okpanachi (2011)	3	2002-2008	T-test statistics	The post-mergers and acquisitions' period was more financially efficient than the pre-mergers and acquisitions' period.

3.2 Sample and data

Firstly, in the period from 2004 to 2007, all the M&As activities from firms of Greek interests, listed in the Main market of the Athens Exchange at the bank sector are tracked. Secondly, from them for further analysis, are excluded the firms that performed M&As activities in less than a three-year period before and after the several M&As examined events. Also, in case of that some firms from this preliminary sample firms have been de-listed from the ASE for various reasons (bankruptcy, not meeting the standards of the market, etc.), they were excluded from the sample.

Thus, the final research sample consists of seven banks (see, table 2), listed in the ASE that executed M&As action as acquirers in Greece during the period from 2004 to 2007. More analytically, this study proceeds to an analysis only of listed firms as their financial statements are published and it is easy to find them and evaluate from them firm's economic performance.

Table 2. Sample and data

Date	Banks (Acquirers)	Type of M&A (M or A)	Type of Companies Acquired
2006	Proton Bank	Acquisition	Investment Companies
2005	Proton Bank	Acquisition	Investment Companies
2007	Egnatia Bank	Merger	Banks
2005	National Bank Of Greece	Acquisition	Banks
2006	National Bank Of Greece	Acquisition	Support Services
2007	National Bank Of Greece	Acquisition	Support Services
2004	Emporiki Bank	Acquisition	Investment Companies
2005	Efg Eurobank Ergasias	Acquisition	Investment Companies
2006	Efg Eurobank Ergasias	Acquisition	Investment Companies
2007	Attica Bank	Merger	Investment Companies
2004	Piraeus Bank	Acquisition	Investment Companies
2005	Piraeus Bank	Acquisition	Financial Companies
2005	Piraeus Bank	Acquisition	Investment Companies

3.3 Selected accounting variables (financial ratios)

Financial ratios are widely used for modelling purposes both by practitioners and researchers, as their analysis is one of the most valuable tools for the decision-making of many interested parties, stakeholders: owners, management, personnel, competitors, academics, etc. Their analysis facilitates inter-company as well as intra-company comparisons beyond various argumentations (Pazarskis, 2008).

The post-merger operating performance of a firm is evaluated with its performance at some accounting ratios. For the purpose of this study, nineteen financial ratios are employed, suitable for banks and financial activities' firms, which are the following ratios (see, table 3).

Table 3. Classification of financial ratios

Code	Variable Name	Description
V1	Market-to-Book Value	Market Price-Year End/Book Value Per Share
V2	Market value (in th. euros)	Market Price-Year End*Common shares outstanding
V3	Book value per share	Shareholders funds/Common shares outstanding
V4	Cash flow per share	Cash flow/Common shares outstanding
V5	Dividend payout per share	(Dividends Per Share/Total net profit for the year)*100
V6	Current dividend yield	(Dividends Per Share/Market Price-Year End)*100
V7	Dividends per share (DPS)	Total dividends/Common shares outstanding
V8	Price Earnings (P/E) ratio	Market Price-Year End/ Earnings Per Share
V9	Price to Book value (P/BV) ratio	Market Price-Year End/Book Value Per Share
V10	Total assets (in th. euros)	Total assets (in th. euros)
V11	Shareholders funds (in th.euros)	Shareholders funds (in th. euros)
V12	Operating revenue to turnover (in th.euros)	Operating revenue to turnover (in th. euros)
V13	Profit or Loss before taxation (in th.euros)	Profit or Loss before taxation (in th. euros)
V14	Net income (in th. euros)	Profit or Loss after taxation (in th. euros)
V15	Return on shareholders funds	(Net income/Total assets)*100
V16	Profit margin	(Gross Profit/Sales)*100
V17	Return on total assets	(Net income/Total invested capital)*100
V18	Current ratio	Current Assets/Current Liabilities
V19	Solvency ratio	(Net income+Depreciations)/(Total Liabilities)

3.4 Research Methodology and hypotheses

The M&As action of each company from the sample is considered as an investment that is evaluated by the NPV criterion (if NPV≥0, the investment is accepted). Based on this viewpoint, the study proceeds to its analysis and regards the impact of an M&A action similar to the impact of any other positive NPV investment of the firm to its ratios over a specific period of time (Healy et al., 1992; Pazarskis, 2008).

In order to evaluate the relative change with ratio analysis of the sample of the Greek firms that executed M&As actions, the form of the hypotheses that are examined (in respect of the examined financial ratios: ratios from V1 to V19) are the following:

H_1:Mergers are not expected to have a relative change on the post-merger performance of the acquiring firms at a long run perspective (three years after M&As).

H_2:Mergers are not expected to have a relative change on the post-merger performance of the acquiring firms in a short-term or mid-term perspective (one year or two years after M&As).

The general crucial research question that is investigated by examining the above mentioned hypotheses is the following: "Operating performance in the post-merger period is greater than it is in the pre-merger period for the sample firms of the Greek banking sector?"(Pazarskis, 2008).

The selected financial ratios for each company of the sample over a three-year period before (year t-3, t-2, t-1) or after (year t+1, t+2, t+3) the M&As event are calculated, and the mean (or median) from the sum of each ratio and median for the years t-3, t-2, and t-1 is compared with the equivalent mean (or median) from the years t+1, t+2, and t+3, respectively[1].

Furthermore, the study does not include in the comparisons the year of M&A event (t=0) because this usually includes a number of events which influence firm's post-merger operating performance in this period, as one-time M&As transaction costs, necessary for the deal, etc. (Healy et al., 1992; Pazarskis, 2008; Pazarskis et al., 2011).

4. Analysis of Results

4.1 Three-year period before and after the M&As

The M&As, which constituted the sample of this survey, showed that from out of nineteen ratios tested, seven of them indicated a statistically significant change (tables 4-5 tabulated the summary research results). The variables V10 and V12, which shows the total and operating income, respectively, showed relatively statistically significant change (improvement) in the test period for three years before and after M&As. The variables V3, V4, V5, V6 (investment ratios) and V11 (ratio of capital structure and viability) had the largest and most significant statistical variation.

More specifically, the variable V3, showing the internal (accounting) value of a share and is used to determine if a stock in the stock market is overvalued, showed a significant change (positive). Similar is the statistical variation of the variable V4 (cash flow per share), which shows the amount of funds that flowed in firm as a result of its activities, after deducting all expenses paid. The positive change in this ratio reveals that current business needs are covered by cash flows from firm's operations. As far as the variable V5 is concerned, the larger the percentage of distributable profits, the greater is the dividend paid to shareholders. So, three years after M&As, firms in the sample did not improve this percentage in comparison with that which they had before the transaction and even seems to have dropped the dividend paid to shareholders. The variable V6 shows the investors' performance from dividends of shares and the statistical variation is very significant, indicating the reduction of the dividend yield and the attractiveness of the stock for investors, three years after the implementation of sample's M&As. The variable V11 presents a significant positive change and shows that the percentage of all the firm's assets, which has been funded by the shareholders, was bigger after the M&As.

Regarding the Mann-Whitney test, more ratios have a statistically significant change. Specifically, the variables V3 (Book value per share), V4 (Cash flow per share), V10 (Total assets), V11 (Shareholders funds) and V12 (Operating revanue to turnover) show a positive change, while V5 (Dividend payout per share), V6 (Current dividend yield), V7 (Dividends per share) and V9 (Price to Book value), have a negative change in the test period for three years before and after the M&As.

From the above it is clear that mergers have a relative change on the post-merger performance of the acquiring firms, even three years after M&As, and

[1] In this study, the mean from the sum of each accounting ratio is computed and further discussed than the median, as this could lead to more accurate research results (Pazarskis, 2008), as the median is only a point of time in the post-merger period for firm performance without reflecting the midterm of the post-merger performance. This argument is consistent with many other researchers diachronically (Philippatos et al., 1985; Neely & Rochester, 1987; Cornett & Tehnarian, 1992; Sharma & Ho, 2002; Pazarskis et al, 2009; 2011; 2013; Pramod Mantravadi & A. Vidyadhar Reddy, 2008; and others). Despite this, the study presents the research results with a median analysis performing the Mann-Whitney test, as a non-parametric alternative test to the two-sample t-test, without emphasizing on them, but only for comparison with past studies (Healy et al., 1992; Ramaswamy & Salatka, 1996; etc.) or other ratio studies that employ a methodology with the use of median for ratio calculations.

thus, the above stated proposition of the hypothesis H_1 is rejected.

4.2 Two-year period before and after the M&As

The variables V3, V4, V5 and V11 show a similar change for the test period of two years before and after M&As. The net profit/loss, also, which is denoted by V14, seems to be improved to a small extent, compared with the period two years before the M&A. Thus, the sample showed slightly increased net income, comparing it with those prior to the transaction.

Regarding the Mann-Whitney test, the variables V3 (Book value per share) and V11 (Shareholders funds) have changed significantly and indeed positive, while V5 (Dividend payout per share) and V6 (Current dividend yield) changed negative to a lesser extent.

4.3 One-year period before and after the M&As

According to the analysis of the survey results, the nineteen ratios did not change significantly and did not have had any particular impact (positive or negative) on the post-merger operating performance of merger-involved firms.

The same is observed when analyzing the results of the Mann-Whitney test, where none of the examined ratios shows statistically significant change.

From the above it is clear that mergers have a relative change on the post-merger performance of the acquiring firms at a mid-term perspective after M&As, and thus, the above stated proposition of the hypothesis H_2 is rejected.

4.4 Discussion of results for all the examined years

From the statistical results, it is clear that the liquidity ratios, which are a part of working capital and demonstrate the company's ability to cover its short-term liabilities from current assets, do not show any statistically significant change.

From efficiency ratios, only the net profit one shows a small positive change in the control interval for two years before and after M&A. Merger-involved firms showed, although to a lesser extent, increased net profits.

However, as the ratios of capital structure and viability are concerned, for periods of three and two years before and after M&As, show statistically significant changes. These ratios identify the financial situation of a company long-term perspective and specifically in this survey show that banks improved their capital and operating revenue.

Table 4. Pre-merger and post-merger ratios (t-statistic test)

Variables	Mean Pre-M&As			t=0	Mean Post- M&As		
	From -3 to -1	From -2 to -1	From -1 to -1		From +1 to +1	From +1 to +2	From +1 to +3
V1	2,79	3,11	3,71		2,91	2,58	2,18
V2	3,112	3,659	4,621		6,134	5,809	4,891
V3	3,88[a]	3,80[b]	4,13		7,01	7,10[b]	7,19[a]
V4	0,886[a]	0,901[b]	0,939		1,85	1,88[b]	2,03[a]
V5	48,1[a]	44,3[b]	41,3		37,6	19,4[b]	14,5[a]
V6	2,47[a]	2,30	1,93		2,02	1,20	0,77[a]
V7	0,283	0,263	0,275		0,400	0,257	0,165
V8	47	59	111		23,8	53	42,7
V9	2,256	2,470	2,84		2,17	1,92	1,6
V10	16.886[b]	17.424	18.062		35.948	39.406	41.437[b]
V11	1.123[a]	1.222[b]	1.356		3.445	3.638[b]	3.723[a]
V12	652[b]	702	793		1.644	1.692	1.673[b]
V13	183,4	212	246		634	550	350,6
V14	126,1	149[c]	171		515	436[c]	241,7
V15	12,5	14,1	17,9		15,3	10,8	4,6
V16	26,0	29,7	32,0		33,0	27,6	22,9
V17	1,88	2,44	3,47		1,618	0,92	-1,04
V18	0,322	0,324	0,342		0,482	0,348	0,329
V19	15,1	14,7	14,0		17,3	17,1	16,2

Note:

[a, b, c] indicate that the mean change is significantly different from zero at the 0.01, 0.05, and 0.10 probability level, respectively, as measured by two independent sample mean t-tests.

More analytically, the P-value interpretation levels for the above referred three cases are described below:

$p<0.01$ strong evidence against Ho (see, a)

$0.01 \leq p<0.05$ moderate evidence against Ho (see, b)

$0.05 \leq p<0.10$ little evidence against Ho (see, c)

$0.10 \leq p$ no real evidence against Ho

The investment ratios are the ones that are the most interesting in terms of statistical significance. Although the control interval t±1, did not change, for the other two control periods, changes are numerous and statistically significant, demonstrating that improved or worsened the business performance, depending on the ratio. Also, some investment ratios, which changed in control period for two years before and after, changed for three years before and after M&A and with identical change.

Furthermore, these results are supporting the neoclassic theories, which advocate that the only and main goal of every firm is to maximize profit and it can be achieved through synergy or by reducing the risk (risk reduction theory) or by creating monopolistic market conditions or increasing the market power of firm (monopoly theory or market power theory) (Williamson, 1964; Lintner, 1971; Boyle, 1972; George & Silberston, 1975; Kamien & Schwartz, 1982; Hambrick & McMillan, 1985; Chatterjee, 1986; Lubatkin, 1987; Brush, 1996; Ghosh, 2001; Pazarskis et al., 2010a; etc.).

Also do not support managerial theories. Managerial theories include the "'Hubris or Managerial Hypothesis" and this theory, by separating the interests and beliefs of the management of these owners-shareholders of a company, considers that managers may have different objectives or considerations and for this reason to make a M&As, while this may not actually serve the interests of their shareholders (Baumol, 1962; McGuire et al., 1962; Marris, 1964; Roll, 1986; Pazarskis et al, 2010a; etc.).

Table 5. Pre-merger and post-merger ratios (Mann-Whitney test)

Variables	Median Pre-M&As			t=0	Median Post- M&As		
	From -3 to -1	**From -2 to -1**	**From -1 to -1**		**From +1 to +1**	**From +1 to +2**	**From +1 to +3**
V1	2,570	3,210	3,975		2,440	2,145	1,680
V2	1,822	1,729	4,481		2,285	4,113	3,933
V3	3,300[a]	3,300[b]	3,430		8,680	7,160[b]	7,160[a]
V4	0,730[b]	0,730	0,730		1,610	1,620	1,780[b]
V5	56,47[a]	53,55[c]	49,75		44,90	4,85[c]	0,000[a]
V6	2,790[a]	2,635[c]	2,490		2,330	0,000[c]	0,000[a]
V7	0,245[b]	0,265	0,300		0,400	0,000	0,000[b]
V8	20,6	20,6	23,1		22,4	14,9	15,1
V9	1,920[b]	2,505	3,015		1,650	1,420	1,080[b]
V10	7.676[b]	8.909	8.913		19.289	19.430	19.430[b]
V11	810[a]	1.136[b]	1.140		3.178	3.840[b]	3.167[a]
V12	500[c]	530	570		952	952	952[c]
V13	107	140	271		386	386	300
V14	72,70	102	190		320	320	250
V15	12,28	12,28	14,76		13,91	10,49	6,08
V16	27,76	30,82	30,72		34,73	26,63	23,98
V17	1,045	1,24	1,315		1,670	1,19	0,615
V18	0,230	0,315	0,310		0,210	0,190	0,165
V19	7,82	7,96	7,86		7,98	8,39	8,85

Note: [a, b, c] indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.

5. Conclusions

Mergers and Acquisitions (M&As) are mechanisms that attract public interest and one of the most important movements that can change dramatically, in a short time, the value of a firm (for good or not). However, M&As do not always contribute to the profitability of firms that are involved in M&As transactions and lead firms to the improvement of economic performance.

In order to discuss this confrontation on M&As, this study analyses M&As and business performance of banks in Greece through an accounting approach. Using accounting data (financial ratios), the post-merger performance of a sample of Greek banks, listed on the Athens Stock Exchange that executed at least one merger or acquisition in the four-year-period from 2004 to 2007, is investigated. For the purpose of the study, a set of nineteen ratios is employed, in order to measure banks' operating performance and to compare pre- and post-merger performance for three, two and one year before and after the M&As.

The results' analysis showed that M&As have provided a better post-merger economic performance for the bank acquiring firms, while the effect of M&As on sample's business performance, is not direct, but it becomes obvious during the years, except for the dividend policy, which can be considered as banking companies had chosen, because of the global economic crisis. Thus, it appears that the results and effects of M&As, in the business performance of banks in the sample, are positive and look down through the years and the number of ratios, which are statistically and significantly changed, is bigger as the control interval widens.

Future extensions of this study could examine the effects of bank M&As to a larger sample or within other time periods.

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APPENDIX

Table 6. Pre-merger and post-merger ratios (t-statistic test) for three-year period before and after the M&As

Variables	*Mean Pre-M&As*	*Mean Post-M&As*	*t-statistic test*	*p-value*	*Confidence interval 95%*
V1	2,79	2,18	1,24	0,226	(-0,386 ; 1,598)
V2	3,112	4,891	-1,25	0,221	(-4,678 ; 1,121)
V3	3,88	7,19	-2,78	0,009***	(-5,73 ; -0,88)
V4	0,886	2,03	-3,00	0,006***	(-1,932 ; -0,354)
V5	48,1	14,5	4,04	0,000***	(16,61 ; 50,59)
V6	2,47	0,77	3,47	0,002***	(0,696 ; 2,700)
V7	0,283	0,165	1,16	0,259	(-0,092 ; 0,327)
V8	47	42,7	0,12	0,905	(-73,2 ; 82,4)
V9	2,256	1,6	1,67	0,105	(-0,132 ; 1,336)
V10	16.886	41.437	-2,19	0,039**	(-47.773 ; -1.329)
V11	1.123	3.723	-3,12	0,005***	(-4.338 ; -861)
V12	652	1.673	-2,23	0,037**	(-1.972 ; -70,24)
V13	183,4	350,6	-0,92	0,371	(-549,52 ; 215,02)
V14	126,1	241,7	-0,68	0,506	(-473,18 ; 242,07)
V15	12,5	4,6	1,32	0,198	(-4,41 ; 20,12)
V16	26,0	22,9	0,51	0,616	(-9,32 ; 15,48)
V17	1,88	-1,04	1,48	0,152	(-1,16 ; 7,01)
V18	0,322	0,329	-0,06	0,952	(-0,250 ; 0,236)
V19	15,1	16,2	-0,21	0,834	(-11,43 ; 9,29)

Note: ***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05, and 0.10 probability level, respectively, as measured by two independent sample mean t-tests.
More analytically, the P-value interpretation levels for the above referred three cases are described below:
p<0.01 strong evidence against Ho (see, ***)
0.01≤p<0.05 moderate evidence against Ho (see, **)
0.05≤p<0.10 little evidence against Ho (see, *)
0.10≤p no real evidence against Ho

Table 7. Pre-merger and post-merger ratios (Mann-Whitney Test) for three-year period before and after the M&As

Variables	*Median* Pre-M&As	*Median* Post- M&As	*p-value*	*Confidence interval 95%*
V1	2,570	1,680	0,114	(-0,320 ; 1,740)
V2	1,822	3,933	0,602	(-3,557 ; 0,929)
V3	3,300	7,160	0,010***	(-6,258 ; -0,521)
V4	0,730	1,780	0,027**	(-1,790 ; -0,091)
V5	56,47	0,000	0,002***	(15,86 ; 57,09)
V6	2,790	0,000	0,002***	(0,470 ; 2,850)
V7	0,245	0,000	0,048**	(-0,0001 ; 0,3101)
V8	20,6	15,1	0,423	(-8,7 ; 11,2)
V9	1,920	1,080	0,040**	(0,070 ; 1,360)
V10	7.676	19.430	0,041**	(-51.796 ; -389,27)
V11	810	3.167	0,007***	(-4.122 ; -281,09)
V12	500	952	0,084*	(-1.635 ; 320)
V13	107	300	0,303	(-441,5 ; 64,90)
V14	72,70	250	0,275	(-392 ; 66,10)
V15	12,28	6,08	0,261	(-3,77 ; 10,93)
V16	27,76	23,98	0,666	(-9,61 ; 16,30)
V17	1,045	0,615	0,229	(-0,292 ; 1,313)
V18	0,230	0,165	0,205	(-0,039 ; 0,180)
V19	7,82	8,85	0,438	(-4,24 ; 2,15)

Note: ***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.

Table 8. Pre-merger and post-merger ratios (t-statistic test) for two-year period before and after the M&As

Variables	*Mean Pre-M&As*	*Mean Post-M&As*	*t-statistic test*	*p-value*	*Confidence interval 95%*
V1	3,11	2,58	0,90	0,380	(-0,693 ; 1,751)
V2	3,659	5,809	-1,07	0,296	(-6,315 ; 2,015)
V3	3,80	7,10	-2,38	0,026**	(-6,16 ; -0,43)
V4	0,901	1,88	-2,18	0,045**	(-1,944 ; -0,024)
V5	44,3	19,4	2,38	0,028**	(3,0 ; 46,8)
V6	2,30	1,20	1,69	0,110	(-0,276 ; 2,479)
V7	0,263	0,257	0,05	0,960	(-0,276 ; 0,289)
V8	59	53	0,11	0,911	(-116,8 ; 130,0)
V9	2,470	1,92	1,22	0,236	(-0,388 ; 1,490)
V10	17.424	39.406	-1,63	0,123	(-50.642 ; 6.678)
V11	1.222	3.638	-2,49	0,027**	(-4.511 ; -319,67)
V12	702	1.692	-1,71	0,109	(-2.231 ; 251,55)
V13	212	550	-1,75	0,104	(-756,19 ; 79,88)
V14	149	436	1,84	0,091*	(-628,32 ; 53,04)
V15	14,1	10,8	0,64	0,526	(-7,39 ; 14,02)
V16	29,7	27,6	0,26	0,798	(-14,77 ; 18,98)
V17	2,44	0,92	1,37	0,193	(-0,86 ; 3,91)
V18	0,324	0,348	-0,15	0,881	(-0,352 ; 0,306)
V19	14,7	17,1	-0,36	0,726	(-16,09 ; 11,41)

Note: ***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.

Table 9. Pre-merger and post-merger ratios (Mann-Whitney Test) for two-year period before and after the M&As

Variables	*Median* Pre-M&As	*Median* Post- M&As	*p-value*	*Confidence interval 95%*
V1	3,210	2,145	0,396	(-0,740 ; 1,969)
V2	1,729	4,113	0,625	(-6,568 ; 1,602)
V3	3,300	7,160	0,030**	(-6,371 ; -0,260)
V4	0,730	1,620	0,130	(-1,940 ; 0,120)
V5	53,55	4,85	0,051*	(0,01 ; 57,08)
V6	2,635	0,000	0,094*	(-0,001 ; 2,760)
V7	0,265	0,000	0,594	(-0,2901 ; 0,3601)
V8	20,6	14,9	0,487	(-15,7 ; 12,6)
V9	2,505	1,420	0,201	(-0,520 ; 1,680)
V10	8.909	19.430	0,157	(-53.665 ; 7.077)
V11	1.136	3.840	0,046**	(-4.371 ; -114,60)
V12	530	952	0,236	(-2.304 ; 394,70)
V13	140	386	0,285	(-775,8 ; 102,5)
V14	102	320	0,285	(-644,5 ; 94,3)
V15	12,28	10,49	0,707	(-8,46 ; 12,81)
V16	30,82	26,63	0,975	(-17,02 ; 19,64)
V17	1,24	1,19	0,583	(-0,572 ; 2,212)
V18	0,315	0,190	0,418	(-0,0898 ; 0,2700)
V19	7,96	8,39	0,583	(-6,47 ; 10,48)

Note: ***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.

Table 10. Pre-merger and post-merger ratios (t-statistic test) for one-year period before and after the M&As

Variables	*Mean Pre-M&As*	*Mean Post-M&As*	*t-statistic test*	*p-value*	*Confidence interval 95%*
V1	3,71	2,91	0,94	0,369	(-1,092 ; 2,689)
V2	4,621	6,134	-0,48	0,643	(-8,573 ; 5,548)
V3	4,13	7,01	-1,44	0,181	(-7,35 ; 1,59)
V4	0,939	1,85	-1,53	0,164	(-2,289 ; 0,460)
V5	41,3	37,6	0,22	0,833	(-37,0 ; 44,2)
V6	1,93	2,02	-0,10	0,925	(-2,396 ; 2,218)
V7	0,275	0,400	-0,61	0,572	(-0,690 ; 0,440)
V8	111	23,8	1,000	0,362	(-136,8 ; 311,5)
V9	2,84	2,17	1,05	0,320	(-0,765 ; 2,118)
V10	18.062	35.948	-0,95	0,375	(-64.489 ; 26.716)
V11	1.356	3.445	-1,50	0,185	(-5.505 ; 1.327)
V12	793	1.644	-1,02	0,345	(-2.885 ; 1.182)
V13	246	634	-1,22	0,277	(-1.205 ; 429,86)
V14	171	515	-1,34	0,238	(-1.001 ; 315,03)
V15	17,9	15,3	0,39	0,709	(-12,82 ; 18,09)
V16	32,0	33,0	-0,10	0,926	(-24,9 ; 22,9)
V17	3,47	1,618	0,91	0,406	(-3,40 ; 7,11)
V18	0,342	0,482	-0,47	0,653	(-0,865 ; 0,585)
V19	14,0	17,3	-0,34	0,742	(-26,30 ; 19,64)

Note:
***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.

Table 11. Pre-merger and post-merger ratios (Mann-Whitney Test) for one-year period before and after the M&As

Variables	*Median* **Pre-M&As**	*Median* **Post- M&As**	*p-value*	*Confidence interval 95%*
V1	3,975	2,440	0,432	(-1,490 ; 3,050)
V2	4,481	2,285	0,943	(-6,,460 ; 8,054)
V3	3,430	8,680	0,201	(-8,162 ; -1,482)
V4	0,730	1,610	0,250	(-2,469 ; 0,350)
V5	49,75	44,90	1,00	(-38,57 ; 49,99)
V6	2,490	2,330	1,00	(-2,620 ; 2,511)
V7	0,300	0,400	0,669	(-0,599 ; 0,380)
V8	23,1	22,4	0,455	(-14,6 ; 516,4)
V9	3,015	1,650	0,353	(-1,069 ; 2,280)
V10	8.913	19.289	0,471	(-68.241 ; 25.398)
V11	1.140	3.178	0,229	(-5.323 ; 1.017)
V12	570	952	0,471	(-2.919 ; 892,59)
V13	271	386	0,298	(-1.437 ; 346,9)
V14	190	320	0,298	(-1.232 ; 236,9)
V15	14,76	13,91	0,936	(-13,16 ; 17,76)
V16	30,72	34,73	0,688	(-23,63 ; 25,65)
V17	1,315	1,670	0,810	(-1,418 ; 10,341)
V18	0,310	0,210	0,936	(-1,170 ; 0,340)
V19	7,86	7,98	0,810	(-26,44 ; 17,18)

Note:
***, **, * indicate that the mean change is significantly different from zero at the 0.01, 0.05 and 0.10 probability level.