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Merger and Acquisition, the Next Day in the Hellenic Banking System, Evidence From the Greek Financial Crisis Period

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The aim of this study is to examine if the merger of banks improves the profitability of banks before and after the completion of the merger, in the Hellenic Banking System. For this reason, data were collected one year before the merger took place and then for the following years. The consequences of merging banks using different financial indicators, such as the capital ratio index, the foreign-to-equity index and the loan burden numerator, were also investigated. The effectiveness of interpreting the improvement of the bank's financial image before and after the merger, for the years 2007-2016, years, before and after the Greek Financial Crisis, in the mergers carried out in the Hellenic Banking System was examined.

Keywords: merger, acquisition, financial institutions, Hellenic Banking System, Greek Banks, profitability, accounting, financial statements, financial ratios

Introduction

In today's globalized economy, mergers and acquisitions are increasingly used around the world to improve company competitiveness by increasing market share, expanding portfolio to reduce business risk, entering new markets and geographies, and exploiting economies of scale.

A merger is a combination of two or more entities through the acquisition or aggregation of interests, it is different from the consolidation, as no new entity is created by the merger. The incentives behind mergers and acquisitions are economies of scale, market share and revenue growth, taxation, synergy, geography and any other diversification. As a result, banks merged with each other or aimed to acquire a bank. The merged banks seem to have increased their efficiency in the years following the merger and this is true of mergers of two banks operating in the same markets and even thought the size of the new bank is not so large.

The purpose of the study is to answer the question of whether the merger of banks improves the profitability of banks before and after the completion of the merger. For this reason, data were collected one year before the merger and then for the following years. The effects of the merger of banks were also investigated using different financial ratios, such as the capital ratio, the equity ratio and the debt burden ratio.

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The effectiveness of the interpretation of the improvement of the financial image of the bank before and after the merger was examined, for the years 2007-2016, in the mergers that took place in the Greek Banking System.

The sample includes mergers and acquisitions of banks that took place from 2007 to 2016 in the Hellenic Banking System. Improvement before or after the merger was considered. In order to achieve the main goal of the study, the following hypotheses have been formulated:

- (H0): Based on the analysis of the indicators and financial ratios, there is no improvement one year before and after;
- (H1): there is an improvement one year before and one year after the merger.

Merger and Acquisitions: Terminology and Differences

The term "merge" comes from the British terminology, which means "merge" two companies by absorption. This is done when one company buys another and by absorbing it keeps the original corporate identity of the acquiring company. Specifically, it is the act, by which one or more companies are dissolved without following their liquidation, while at the same time they transfer all their property in exchange for another, which either pre-exists or is created for this purpose. The consideration consists of shares of the company to which the property of the dissolved companies was transferred and is given to those who previously participated in the companies, which legally ceased to exist. After the merger with the completion of the procedures, a new legal entity emerges.

The term "acquisition" is derived from the corresponding British term, which means the purchase of a company's assets and the simultaneous liquidation of liabilities, while the company being sold is dissolved. Specifically defined as the transaction in which a company acquires a part or all of its holding (shares or assets) from another. It is part of a business development strategy when it is considered more advantageous to take over the operation of an existing company than to start a new one from scratch. For an acquisition, holding at least 50% of the voting shares is sufficient.

In a simple acquisition, the acquired company continues to exist as a subject of law, while in a merger acquisition, the company that transfers its property to another in exchange for money, ceases to exist as a subject of law. When in a merger acquisition not money is paid in exchange but shares of participation, this acquisition constitutes the merger of the specific companies.

There are three ways to merge:

1. By acquiring one from another, by transferring the total or majority part of the ownership of one business (acquired) to another (repurchaser), who pays the corresponding price.

2. By absorbing one from another, when a large bank takes over all or part of the assets and liabilities of another smaller bank. The absorption process is carried out with the following three steps:

a. Liquidation of the absorbed bank;

b. Increase in the share capital of bank Z which absorbs X and which increase is intended to reward the inflows made by the absorbed bank X;

c. The securities of bank X are exchanged with the shares of bank Z according to the proportion agreed. If the value given to the new securities is higher than the value of the old securities the difference will be paid by the shareholders of the old bank. Otherwise bank Z will return the difference.

3. By setting up a new company.

Mergers correspond to different forms of business integration. Thus, business integration can be vertical, horizontal or a combination of activities.

Vertical merger refers to mergers of companies that cover different but complementary stages of the production process (e.g. pumping-refining and distribution of oil). Horizontal merger refers to mergers of companies in the same sector, covering the same or related phase of the production chain. The conglomerate merger covers in a single organizational structure companies from different branches, whose activities are not interconnected. Finally, the seamless merger is achieved through the merger of two or more companies that want to achieve the same goal result without necessarily belonging to the same industry or having a relationship.

An acquisition does not always lead to a merger of the acquire with the acquired company. That is, if the acquisition of a company, its integration and coordination within a larger group is already a complex undertaking, the merger with the acquiring company or with its other subsidiaries is even more difficult and rarely brings the expected benefits, at least in the short term.

The main incentives that go to the acquisitions are:

- The creation and utilization of financial synergies, due to their larger size, improving the reliability of all.
- The creation and utilization of operational synergies between companies, resulting in cost savings and the exploitation of economies of scale (fixed cost remaining the same for more units of product/service are produced) and/or range economies (ensuring lower production costs by adding related-additional productive processes or distribution networks) companies, better access to capital.
- The replacement of an inefficient management, aiming at the consolidation and development of the acquired company and a possible prospect of its absorption or resale with a profit. This incentive is common in so-called “hostile” acquisitions, i.e. those made without the consent of the acquired company.
- The strengthening of the acquiring power of the company in the national and/or the international market, with the aim of restricting the competition and additional, oligopolistic profits.
- Managers personal aspirations of the acquiring company, in order to increase their prestige and remuneration or to maintain their privileges. In contrast to all the previous cases, where the central criterion is the increase of the assets and the total financial value of the acquiring company or its group, this incentive does not necessarily serve the interests of the shareholders.
- Increase the size of each bank very competitive.

The reasons that lead a banking organization to adopt the policy of acquisitions and mergers are many, according to Group of Ten (2001). We can categorize them either as reasons that optimize value through cost reduction (economies of scale, purpose, tax reasons, etc.), or as reasons for value optimization through increased revenue and profits (approaching larger customers, increasing market power, etc.), or as applications that do not optimize value (job security for managers, higher management fees, shareholder pressure for growth, etc.) and finally other environmental factors (globalization, role of the state, differences in legislation, differences in culture, etc.).

The Effect of Mergers and Acquisitions on Bank Stock Returns

An important reason that can lead two banking institutions to a merger or acquisition is to maximize their share price. The announcement of the intention for acquisition/merger is of great interest to the shareholders since it controls two cases:

1. The "information case" according to which the bank announcing its intention to acquire another bank is likely to know that its market value of its share is undervalued.

2. The "case of inefficient management" according to which after the announcement of the acquirer to make a merger move, the acquisition candidate will be forced to improve its efficiency in order to become more efficient in order to avoid the purchase.

Nevertheless, the intention to acquire and merge does not always lead to maximizing the value of the new bank that will come to the surface. If the utility function of the management of the acquiring bank is increasing in size of the bank, it is likely that the management will proceed to optimize only its personal benefit without taking into account the size of the price which may be much higher than the value of the acquired bank (Roll, 1986).

Accordingly, the management of the acquiring bank also overestimates its ability to discover target banks whose value it considers devalued, thus paying a theoretically relatively high price.

Literature Review

Healy, Palepu, and Ruback (1992) talked about the impact of mergers and acquisitions on corporate performance. Theoretically, mergers improve performance due to increased market power, synergy and other qualitative and quantitative factors. After evaluating the performance, this study shows that the mergers failed to contribute positively to the performance improvement.

Rhoades (1993) spoke about the impact of mergers in the banking industry on profitability and profitability taking into account both domestic and cross-border mergers. This article discusses cost-effectiveness analysis from 33 banks to banks showing that most of the domestic mergers improve cost-effectiveness and small profitability, improve profitability and do not improve cost-effectiveness across borders mergers.

Mylonidis, and Kelnikola (2005) investigate the merger of activities in the Greek banking system. The main purpose is to access the financial performance of the recent mergers and acquisitions in the Greek banking system. The methodology is used to access financial performance while maintaining financial performance before and after the merger of banks with Greek banks. They conclude that the merger has a positive impact on banks' operating performance, but has a negative impact on liquidity.

Choi, and Harmatuck (2006) discussed post-operation performance of constructive mergers. This study examines post-merger operational performance over the last two decades (1980-2002). Following the merger, cash flow returns did not improve significantly. Second, operating performance improved slightly due to the increase in business size.

Mantravadi, and Reddy (2008) investigate the effects of mergers on the operating performance of acquisitions in various industries by examining some pre-merger and post-merger financial ratios. The results show that there are small fluctuations in the impact on post-merger performance in different industries. In particular, the mergers appear to have had a slightly positive impact on the profitability of companies in the banking and financial sectors.

Merger and Acquisition in the Banking System

Mergers and acquisitions have been found to be less effective. In particular, domestic mergers and acquisitions can be costly for organizations with dissimilar lending, profit, cost, deposit and size strategies. For cross-border M&A, differences in lending and credit risk strategies contribute to higher performance while capital diversity and cost structure have a negative performance impact.

Globally, one of the most notable developments in the banking sector over the last 20 years has been the unprecedented level of mergers and acquisitions (M&A). Due to the need for restructuring and the creation of new financial interests, companies are led to mergers and acquisitions. Thus they have changes or adjustments to the goals. It is very important at this point to emphasize the transfer of their facilities which can sometimes result in positive results for companies and sometimes negative.

Evidence of Merger and Acquisitions From the Hellenic Banking System

In Greece, the trends for Acquisitions and Mergers appeared later in relation to the international ones but gradually took on large dimensions. The first national mergers and acquisitions took place in the 1990s. The aim was to create large banking groups capable not only of maintaining but also of expanding their share of the Greek market. Greek companies also needed to enter into alliances to become stronger and expand locally and internationally. However, it has been observed that despite the significant increase in acquisitions and mergers, the pace of Greek companies is small compared to that abroad.

It is important to recall at this point that banks are being driven into mergers and acquisitions in order to increase their competitiveness, i.e. to become stronger against their respective financial institutions. With the entry into the euro, the European Central Market has been consolidated and market share, however, are not sufficient indicators to be able to control competition.

According to Linder, and Crane (1993), reducing costs does not always mean increasing profits. Large banks have a higher rate of non-performing loans. So small banks can offer the same cheapness as large ones.

In 2007, the European Central Bank conducted a survey that shows that in Greece there is a huge concentration in this sector which limits the competitive advantage. Some of the conclusions about the structure and prospects of the Greek banking sector according to the EU Banking Structure Report are:

- Greece is characterized by the large degree of mergers;
- A total of 62 banks are active in the country;
- The small number of institutions shows the great potential for growth of the Greek market;
- ATMs are few;
- Internet usage is 2%;
- There is low investment growth.

A survey conducted by the auditing company PWC regarding the acquisitions and mergers in Greek companies which have been completed in 2016 shows that their number amounts to 38 and their value is 404 billion, almost three times more than in 2015. Greek companies attracted a total of € 4.4 billion, of which 75% concerns sales of non-core assets by registered banks, as well as € 1.6 billion from international corporate bond issues. Despite this, the activity of mergers and acquisitions in Greece continues to be very small compared to the rest of Europe.

There are several differences that occur in Greek companies in relation to international ones. The most important of these are:

- All Greek companies are small and medium in size and for this reason they are not listed on the stock exchange. That is, they do not cover the membership qualifications.
- Due to the constraints and the reduced prospects of the domestic markets, the companies cannot develop internally.

- Most companies in the Greek sector are family run where it works negatively to create strategies for their organization and operation.
- State interference in the financial transactions of companies complicates their development and the activity of mergers and acquisitions.

All the above explain the reasons why new companies are not led to mergers and acquisitions in Greece even if this benefits the companies themselves in the long run. Business level competition is increasing and the degree of new entrants in Greece is increasing. So companies will have to become stronger in order to survive. One way is definitely the mergers and acquisitions that will make them stronger and so they will be able to face the difficulties and competition of other big companies that are entering with great force from abroad.

Alpha Bank—Emporiki Bank

There is no doubt that the most successful bank acquisition in Greece is Emporiki bank from Alpha bank. It had a major shareholder, Credit Agricole who did not understand the Greek banking logic. Emporiki went from bad to worse and it is no coincidence that in the last 7-8 years and before it was sold it recorded losses of 13-14 billion. In 2012 Emporiki already had 44% NPLs in the only sector that showed the right way Emporiki was in timely recording of non-performing loans.

Credit Agricole was forced by the BoG to leave Emporiki bank to pay Alpha bank about 3 billion euros in capital for Alpha bank to acquire Emporiki. This deal was to signal the big change of Alpha bank and make it the strongest in terms of capital. Credit Agricole's 3 billion changed the fortunes of Alpha bank and their prudent management maximized the benefits.

Finally, Alpha bank was the only bank with a positive net position, showed better stock market behavior over time and showed better results in the stress tests of recent years.

Table 1
Alpha Bank SA

	2011	2012	2013	2014	2015	2016
Assets	59.148,047	58.357,324	73.697,25	72.935,438	69.296,188	64.872,266
Equity	1.417,253	613,152	8.312,394	7.651,816	9.015,105	9.077,281
Income	-572,087	3.406,663	4.188,6875	3.774,8511	3.340,604	3.121,084
Bank deposits	22.521,199	25.217,125	19.082,723	17.300,113	25.115,363	19.105,574
Customer deposits	26.077,051	27.091,527	40.252,879	40.625,676	30.650,246	32.053,844
Capital Relations (autonomy)	0.024	0.011	0.113	0.105	0.130	0.140
Debt/Equity	40,734	94,176	7,866	8,532	6,687	6,147
Loan Charge	0.976	0.989	0.887	0.895	0.870	0.860

Regarding Alpha Bank

- Alpha Bank in 2001 one year before the completion of the merger recorded in its assets 59,148,047 and at the end of 2011 decreased to 58,357,324.
- Revenues amount to -572,087 in 2011 and 3,406,663 in 2012. In the case of Alpha Bank, revenues increase from 2011 to 2012.
- Equity amounts to 1,417.23 in 2011 and 613,152 in 2012.
- Bank and customer deposits increase and decrease over time.
- Capital relations (autonomy) in 2011 were 0.024 and in 2012 it was 0.011.

- The Debt-to-Equity Ratio in 2011 was 40,734 while in 2012 it was 94,176.
- The loan charge in 2011 was 0.976 and in 2012 it was 0.989.

Piraeus Bank—Agrotiki (Agricultural) Bank

Piraeus previously had 49-51 billion assets and in July 2012 jumped to 74 billion due to the acquisition of the Agricultural Bank. Piraeus was significantly strengthened with liquidity in 2012. Agrotiki through the HFSF contributed funds to Piraeus and of course liquidity, while the synergy side proved to be a very effective acquisition. Certainly there were problems but the deal of Agrotiki was good for Piraeus.

In the summer of 2013, the acquisitions with the 3 Cypriots Banks were completed. The Laiki Bank of Cyprus, former Marfin Bank, participated with 13 billion in the assets of Piraeus, Bank of Cyprus with 9 billion, Elliniki Bank with 1 billion, followed by Millennium bank with 5 billion and Geniki bank with 3 billion and Panhellenic with 600 million.

Table 2

Piraeus Bank

	2011	2012	2013	2014	2015	2016
Assets	49.352,31	70.406,13	92.009,56	89.289,69	87.528,19	81.500,5
Equity	-2.075,07	-2.443,97	8.423,906	7.210,16	9.907,641	9.663,621
Income	-1.091,5	3.404,425	3.944,86	3.780,008	3.256,243	2.945,255
Bank deposits	@CF	32.561,32	26.274,95	23.690,33	34.490,58	27.020,94
Customer deposits	22087,56	4601,445	28164,67	31234,75	4424,773	15393,28
Capital Relations (autonomy)	-0.042	-0.035	0.092	0.081	0.113	0.119
Debt/Equity	-24,783	-29,808	9,922	11,384	7,834	7,434
Loan Charge	1,042	1,035	0.908	0.919	0.887	0.881

Regarding Piraeus Bank

- Piraeus Bank in 2011 one year before the completion of the merger recorded 49,352.31 in its assets and at the end of 2012 decreased to 70,406.13.
- Revenues in 2011 amount to -1,091.56 and in 2012 to 3,404,425. In the case of Piraeus Bank the revenues increase from 2011 to 2012.
- Equity amounts to -2,075.07 in 2011 and -2,443.97 in 2012.
- Bank and customer deposits increase and decrease over time.
- Capital relations (autonomy) in 2011 were -0,042 and in 2012 it was -0,035.
- The Debt-to-Equity Ratio in 2011 was -24,783 while in 2012 it was -29,808.

The debt burden in 2011 was 1,042 and in 2012 it was 1,035.

Eurobank—Post-Savings Bank

The most important strategic decision of Eurobank was that it kept the Postal Savings Bank (Tachidromiko Tamieftirio—TT) network autonomous. The TT was given by order of the Bank of Greece (BoG) to Eurobank for reasons of systemic balances.

Alpha Bank lost the TT intentionally or not but had the first say, however the BoG's desire at the time was to end up with Eurobank. Eurobank liquidity improved significantly, the loan-to-deposit ratio also improved.

The fact that TT was kept autonomous resulted in the outflow of deposits being proportionally smaller compared to the industry. If TT had been fully absorbed it would have lost more deposits.

Proton Bank with 600 million loans and 28 branches did not add any distinct value to Eurobank other than some executives and the network.

Table 3
Eurobank

	2011	2012	2013	2014	2015	2016
Assets	76.822	67.653	77.586	75.518	73.553	66.393
Equity	597	-932	4.242	5.636	6.463	6.715
Income	4.445,297	4.369	3.151	3.167	2.888	2.832
Bank deposits	@CF	@CF	27.099	22.866	29.783	21.686
Customer deposits	32.967	30.053	12.936	17.474	1.579	12.318
Capital Relations (autonomy)	0.008	-0.014	0.055	0.075	0.088	0.101
Debt/Equity	127,680	-73,589	17,290	12,399	10,381	8,887
Loan Charge	0.992	1.014	0.945	0.925	0.912	0.899

Regarding Eurobank

- Eurobank in 2011 one year before the completion of the merger recorded in its assets 76,822 and at the end of 2012 decreased to 67,653.
- Revenues amount to 4,445,297 in 2011 and 4,369 in 2012. In the case of Eurobank, revenues decrease from 2011 to 2012.
- Equity amounts to 597 in 2011 and -932 in 2012.
- Bank and customer deposits increase and decrease over time.
- Capital relations (autonomy) in 2011 were 0.008 and in 2012 it was -0.014.
- The Debt-to-Equity Ratio in 2011 was 127,680 while in 2012 it was -73,589.
- The loan charge in 2011 was 0.992 and in 2012 it was 1.014.

National Bank of Greece—Probank

The National Bank of Greece (NBG—Ethniki Bank) made a significant acquisition of Probank in July 2013, acquiring 3.1 billion in assets, of which 3.1 billion in deposits and 2.5 billion in loans. Probank as a size compared to the sizes of NBG was minimal participation but qualitatively did not downgrade the portfolios of NBG, on the contrary it upgraded them.

The acquisition of Finansbank had from an indistinguishable as a negative effect on the NBG that had meaning and performance. NBG was not strengthened by acquisitions mainly because it was too large due to Finansbank. Finansbank was sold for 2.75 billion and this begs the question, the other banks from the synergies arising from the previous acquisitions will record income ... but not NBG because it did not acquire banks because the deal period was long and with current data unfortunate. The total negative impact on the results of NBG from Finansbank was a loss of 3.9 billion, which, however, has passed for the most part in previous years.

The NBG really has two powerful advantages and a very strong disadvantage. The two advantages are that it has the highest capital adequacy ratio and the best loan-to-deposit ratio. That is, in terms of capital and liquidity, NBG is the best of the other banks. However, it suffers in the production of income from Greece as Finansbank was sold while there are no synergies.

Regarding the National Bank of Greece

- The National Bank of Greece in 2011 one year before the completion of the merger recorded 106,869.9 in its assets and at the end of 2012 decreased to 104,798.80.

- Revenues amount to -4,673.30 in 2011 and 6,202,773 in 2008. In the case of the National Bank of Greece, revenues decrease from 2012 to 2009.
- Equity amounts to -723,117 in 2011 and -2.129.5 in 2012.
- Bank and customer deposits increase and decrease over time.
- Capital relations (autonomy) in 2011 were -0.007 and in 2012 it was -0.020.
- The Debt-to-Equity Ratio in 2011 was -1,007 while in 2012 it was -1,020.
- The loan charge in 2011 was 1,007 and in 2012 it was 1,020.

Table 4

National Bank of Greece

	2011	2012	2013	2014	2015	2016
Assets	106.869,9	104.798,8	110930	115.464	111.232	78.531
Equity	-723,117	-2.129,5	7.111	9.612	9.099	6.907
Income	-4.673,3	6202,773	5916	5.718	2.641	2.407
Bank deposits	34.108,24	33.972,33	27.897	22.226	25.166	18.188
Customer deposits	25.601,43	25.655,11	36.073	44.036	17.586	22.448
Capital Relations (autonomy)	-0.007	-0.020	0.064	0.083	0.082	0.088
Debt/Equity	-1,007	-1,020	-0.936	-0.917	-0.918	-0.912
Loan Charge	1,007	1,020	0.936	0.917	0.918	0.912

Piraeus Bank—Geniki Bank

The CEO of Geniki Bank, N. Karamouzis (CEO of Eurobank the next years) states about this acquisition that Piraeus Bank Group, the largest financial group in the country, decided in May 2014 to merge with the absorption of GENIKI Bank by Piraeus Bank in order to maximize the benefits for the group. GENIKI Bank returned to profitability for the first time 10 years of continuous losses, significantly increased its net worth and improved all its key financial ratios of capital, liquidity and deposits, maintaining them at the highest levels of the Greek market.

This merger with Piraeus Bank maximizes the benefits for the Group and creates strong conditions and significant opportunities for the comprehensive development of operations and the overall and better customer service.

Regarding Piraeus Bank

- Piraeus Bank in 2011 one year before the completion of the merger recorded 49,352.31 in its assets and at the end of 2012 increased to 70,406.13.
- Revenues in 2011 amount to -1,091.5 and in 2012 to 3,404,425. In the case of Piraeus Bank the revenues increase from 20011 in 2012.
- Equity amounts to -2075.07 in 2011 and -2443.97 in 2012.
- Bank and customer deposits increase over time.
- Capital relations (autonomy) in 2011 were 0.042 and in 2012 it was 0.0334.
- The Debt-to-Equity Ratio in 2011 was -24,783 while in 2012 it was -29,808.
- The loan charge in 2011 was 1,042 and in 2012 it was 1,034.

Regarding Gen Hellenic Bank

Gen Hellenic Bank in 2011 one year before the completion of the merger recorded in its assets 3,264,946 and at the end of 2012 decreased to 2,650,052 which means an increase in financial resources which offer financial and other benefits from their operation. As we can see in the table, assets have been on the rise in the coming years

- Revenues amount to -96.1 in 2011 and 140,263 in 2012. In the case of Gen Hellenic Bank, revenues increase from 2011 to 2012
- Equity amounts to 161,692 in 2011 and -354,918 in 2012.
- Bank and customer deposits increase over time
- Capital relations (autonomy) in 2011 were 0.049 and in 2012 were 0.013
- The Debt-to-Equity Ratio in 2011 was 19,192 while in 2012 it was 6,466
- The loan charge in 2011 was 0.950 and in 2012 it was 0.866

Table 5

Piraeus Bank

	2011	2012	2013	2014	2015	2016
Assets	49352,31	70406,13	92009,56	89289,69	87528,19	81500,5
Equity	-2075,07	-2443,97	8423,906	7210,16	9907,641	9663,621
Income	-1091,5	3404,425	3944,86	3780,008	3256,243	2945,255
Bank deposits	@CF	32561,32	26274,95	23690,33	34490,58	27020,94
Customer deposits	22087,56	4601,445	28164,67	31234,75	4424,773	15393,28
Capital Relations (autonomy)	-0.04205	-0.03471	0.091555	0.08075	0.113194	0.118571
Debt/Equity	-24,783	-29,808	9,922	11,383	7,834	7,433
Loan Charge	1,042	1,034	0.908	0.919	0.886	0.881
Gen Hellenic Bank						
	2011	2012	2013	2014	2015	2016
Assets	3264,946	2650,052	2675,624	@NA	@NA	@NA
Equity	161,692	354,918	354,834	@NA	@NA	@NA
Income	-96,1	140,263	114,112	@NA	@NA	@NA
Bank deposits	1096,893	209,392	122,788	@NA	@NA	@NA
Customerdeposits	1772,695	2040,137	2167,765	@NA	@NA	@NA
Capital Relations (autonomy)	0.049524	0.133929	0.132617	0	0	0
Debt/Equity	19,192	6,466	6,540	0	0	0
Loan Charge	0.950	0.866	0.867	0	0	0

Empirical Results

The present survey used a sample of 29 banks that carried out mergers and acquisitions from 2007 to 2016 at European level. The banks that had data for this period were used. The data used for each bank, taken from Bloomberg, were Assets, Equity, Revenue, Customer Deposits and Bank Deposits. Based on these, we proceeded to the calculation of ratios.

In this study, financial ratios were used to analyze the financial performance of banks one year before the mergers and acquisitions took place and then for the following years. Their financial statements for nine years (2007-2016) were studied using three key indicators. Analyzes, a time-tested technique, are most often used in all financial decision-making processes. The results show that the merger agreement does not improve the bank's financial performance.

The ratios used are:

Capital Relations: Express the relationship between equity and total capital available to the business. The prices it gets are from 0-10. This index gives a picture of the autonomy that a company can have and its independence from loan funds and creditors.

The Debt-to-Equity Ratio: Shows the relationship of equity to foreign capital of the company. The higher the index, the more indebted the company is. It is used by the lenders of the company to assess the degree of security provided by their own funds, but also by the management of the company to determine the level to which the use of capital leverage has reached.

Debt Charge: This indicator shows the ratio of loans to total funds of any form used in any way by the business. It is used to estimate the debt burden of the business

Empirical analysis focuses on comparing the means of ratios for each merger between banks using the t-test (test statistic). The t-test is a very versatile statistic that can be used to test whether a correlation coefficient is different from 0. However, it can also be used to test whether two group means are different.

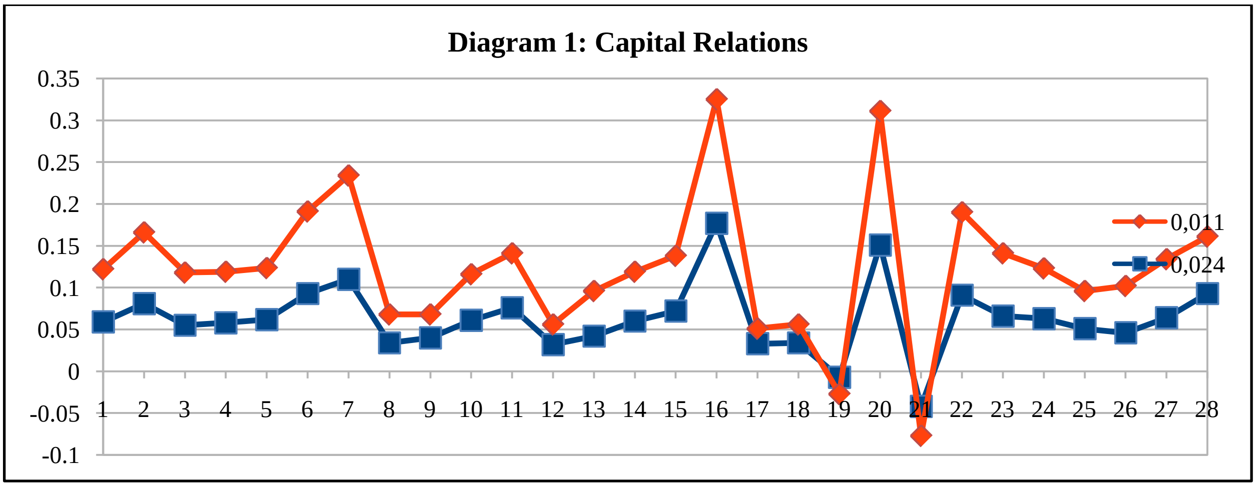
The simplest form of research, according to Field (2009) that can be done is the one with only one independent variable that handles only two ways and only one result is measured. Most often the independent variable does not include an experimental situation and a control group

T- Test results:

Ratios	Average before	Average after	t-stat	t Critical two -tail
Capital Relations (autonomy)	0.0613	0.0592	1,035	2,0484
Debt/Equity	15,125	18,82	-1,714	2,0484
Loan Charge	0.938	0.94	-1,046	2,0484

The table above concerns the averages of the ratios. A comparison is made between the averages before the merger and the averages after the merger, in order to show us the average result in relation to the bank's liquidity. From the calculation it is clear that the situation of the banks does not differ much before the merger.

As we see in the table above the average in terms of capital relations one year before the merger is 0.0613 and one year after it is 0.592. The t-stat is 1.035 and the t Critical two-tail is 2.0484.

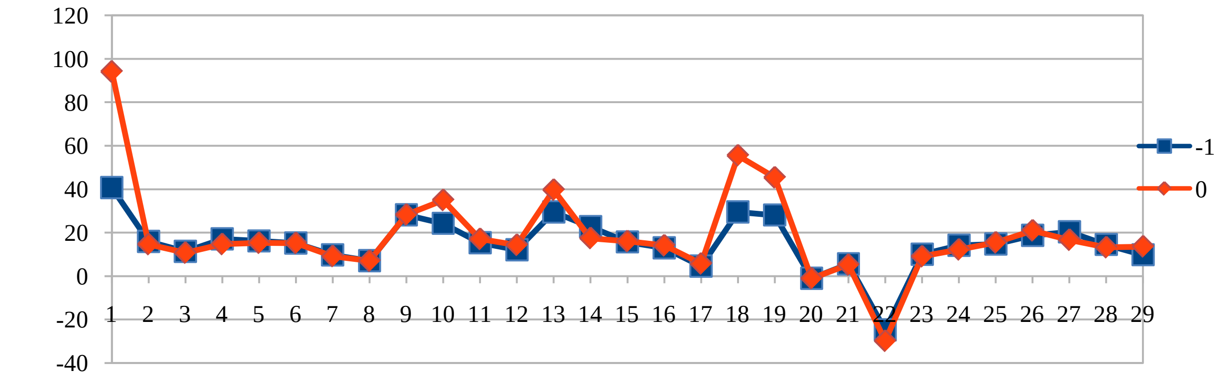


Also one year before the merger we have a median of 0.06, a variation of 0.00173, a standard deviation of 0.0416, a standard error of 0.0077, the first quadrant 0.04 and the second 0.076, the curvature 2.434. Finally the minimum is -0.042 and the maximum is 1.778.

After the merger we have a median of 0.061, a variation of 0.00179, a standard deviation of 0.042, the standard error of 0.0078, the first quadrant 0.034 and the third 0.07, the curvature 1.046. Finally the minimum is -0.035 and the maximum is 0.16.

Debt-to-Equity ratio was 15,125 a year before the merger and 18.8 a year after the merger. The t-stat was 1.714 and the t Critical two-tail was 2.0484.

Diagram 2: Debt-to-Equity Ratio

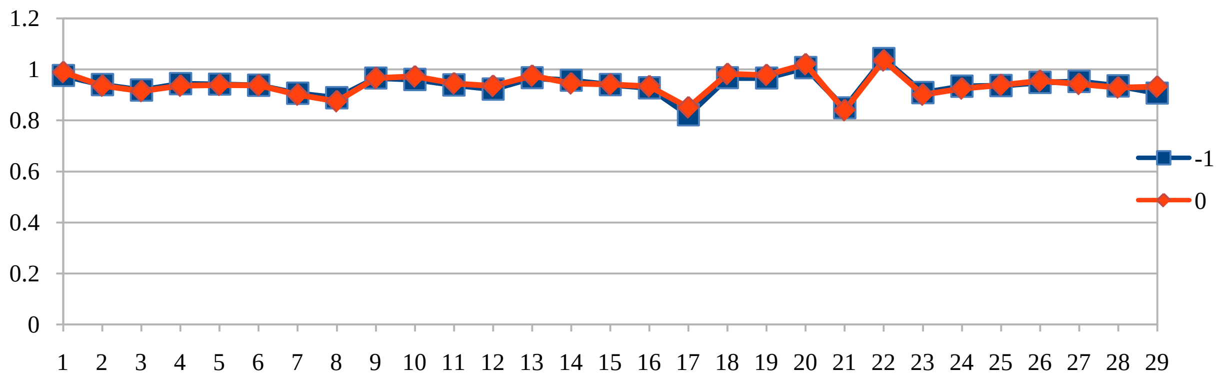


Also a year before the merger we have a median of 15,172, a variance of 136,711, a standard deviation of 11,692, a standard error of 2,171, the first quadrant 10,039 and the third 20,401, the curvature 4,264. Finally the minimum is -24,783 and the maximum is 40,734.

After the merger we have a median of 14,715, a variation of 0.00174, a standard deviation of 438.014, a standard error of 3.886, the first quadrant 10.767 and the third a standard 17.484, a curvature of 6.037. Finally the minimum is -29,808 and the maximum is 94,176.

- The loan charge one year before the merger was 0.938 and one year after the merger was 0.94. The t-stat was -1.046 and the t Critical two-tail was 2.0484.

Diagram 3:Debt Charge



Also a year before the merger we have a median of 0.94, a variation of 0.00174, a standard deviation of 0.0417, a standard error of 0.0077, the first quadrant 0.923 and the second 0.96, the curvature 2.44. Finally the minimum is 0.822 and the maximum is 1.042.

After the merger we have a median of 0.939, a variance of 0.00180, a standard deviation of 0.042, a standard error of 0.0078, the first quadrant 0.929 and the second 966, the curvature 1.031. Finally the minimum is 0.84 and the maximum is 1.035.

Results of hypotheses from the t-test:

Are “capital ratios” affected by comparing variables one year before and after the merger?

- Null Hypothesis (H0): no improvement in capital relations a year before and after.
- Alternative Hypothesis (H1): there is an improvement in capital relations one year before and after.

Because p-value = 0.309347 > (0.05) we accept the Null hypothesis.

Are “Debt-to-Equity ratio” affected by comparing the variables one year before and after the merger?

- Null Hypothesis (H0): no improvement in “outsider relations” between -1 and 0.
- Alternative Hypothesis (H1): there is an improvement in the relationship between strangers and one year before and after.

Because p-value = 0.0974538 > (0.05) we accept the Null hypothesis.

Is the “loan charge” affected by comparing the variables one year before and after the merger?

- Null Hypothesis (H0): no improvement in “debt burden” a year before and after.
- Alternative Hypothesis (H1): there is an improvement in the “loan burden” a year before and after.

Because p-value = 0.158514 > (0.05) we accept the Null hypothesis.

From all the above, the general conclusion is that mergers and acquisitions do not significantly improve the results a year before and after their completion.

Conclusions

The empirical analysis described in the previous chapter focuses on the consequences of bank mergers and acquisitions in terms of their capital and liabilities. Our main conclusion is that banks are not affected by their participation in mergers or acquisitions. That is, in terms of Capital Relations, in terms of Equity to Foreigners and in terms of the Loan burden there is no improvement. According to the data analysis, the hypothesis that bank mergers and acquisitions improve the situation of banks in Greece, must be rejected. As we have seen from previous research in previous years, mergers and acquisitions do not always lead to positive results.

There are some limitations or weaknesses of this research study. The main limitation of this study is the unavailability of financial data before 2005. Another limitation is that it refers only of the effect of diversifying bank mergers and acquisitions, completely ignoring the other business sectors of the economy. Although this study explains the performance effects of bank mergers and acquisitions, it does not cover the other effects of mergers and acquisitions in the banking sector, such as the efficiency associated with specific mergers in the banking sector.

Thus, although each acquisition or merger offers multiple advantages for the parties involved, such as entering new markets, creating economies of scale, using new technologies, etc., they often present weaknesses that are directly or indirectly related to their effectiveness. Often, focusing only on quantitative quantities is wrong, while establishing quality and more timeless criteria ensures long-term prosperity of both the business and the employment relationship.

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