

EXPLORATION OF THE IMPACT OF THE INDUSTRY SECTOR AT THE PROFITABILITY OF THE GREEK LISTED FIRMS AFTER MERGERS AND ACQUISITIONS

Dr. Alexandros Alexandrakis, Associate Professor, Dept. of Accounting & Finance, T.E.I. of Central Macedonia,
E-mail: alex@teiser.gr

Dr. Michail Pazarskis, Adjunct Assistant Professor, Dept. of Accounting & Finance, T.E.I. of Central Macedonia,
E-mail: pazarskis@gmail.com

Dr. Panagiotis Pantelidis, Associate Professor, Dept. of Business Administration,
T.E.I. of Central Macedonia, E-mail: pan@teiser.gr

Perperidou Chrisoula, Post-graduate student, Dept. of Business Administration,
T.E.I. of Central Macedonia, E-mail: perperidou-xri@hotmail.com

ABSTRACT

This paper studies the effects of mergers and acquisitions (M&As) of acquiring firms among different industries in Greece. The main objective of this study is to evaluate the post-merger performance of Greek listed firms in the Athens Stock Exchange that executed as acquirers one merger or acquisition in a two-year-period among seven different industry categories. For the purpose of the study, a set of two ratios (ROA and ROE) is employed, in order to measure thirty firms' post-merger performance per industry, as well as on the whole sample, and selected accounting data from 2006 to 2009 are compared for the post-merger performance of the sample firms at two years after the M&As events. The results revealed the post-merger performance of the acquiring firms was affected by their industry type. Also, M&As have lead to a deterioration of the post-merger performance on the whole examined sample.

Key words: merger, acquisition, performance, profitability, industry sector

JEL Classifications: G34, M40

1. Introductory comments

Mergers and acquisitions (M&As) are both aspects of dynamic strategic management and finance in the process of contemporary corporate restructuring for combining different business entities into one new firm. Notwithstanding, the process of internationalisation and the expansion of the European Union has fostered the whole activity in recent years with the increase of foreign direct investment by multinational companies and international trade (Agorastos et al., 2013). Furthermore, the strategy literature commonly argues that M&As are one of the mechanisms by which firms gain access to new resources and, via resource redeployment, increase revenues and reduce cost (Pazarskis, 2008). However, many researchers and business practitioners regard with scepticism this hypothesis, despite the fact that many others are confident and enthusiastic¹.

In order to examine the success of merger decision in Greece, in general and among different industries, this study proceeds to an extensive accounting comparative analysis of the post-merger performance of a sample of thirty firms from different industry categories after their M&As activities, listed at the Athens Stock Exchange (ASE) in Greece, that executed one merger or acquisition in the period from 2006 to 2009, using selected accounting characteristics (financial ratios) from 2004 to 2011, and attempts to investigate the M&As' effects on their post-merger performance. The examined industry sectors are seven different industry categories: industrial companies, medical services, constructions, internet-publications-etc. companies, commercial and tourist companies, information technology, metals and building materials.

The structure of the paper is as follows: the next section analyses the research design of this study (related past researches with accounting data, sample and data, selection of variables-financial ratios, research methodology and hypothesis). The following section presents and analyses the results, and the last section concludes the paper.

2. Research design

Past related studies on post-merger performance

Many past research papers on accounting and finance argue that stock price performance studies are unable to determine whether M&As create real economic gains or losses and to provide evidence on the sources of any merger-related economic result, as it is difficult to distinguish between stock-market inefficiencies and improvements in economic performance resulting from the merger (for a comprehensive review on this argument, see: Healy, et al., 1992). The examined increases or decreases in equity values are typically attributed to some unmeasured source of real economic factors (such as synergy) or to a general and not well established idea (as management past decisions) (Pazarskis, 2008; Pazarskis et al., 2006).

However, this kind of research, along with their explanations, could partially not be correct, as many other factors influence stock prices and their conclusions do not provide clear and conclusive results argumentation. In this context, the use of post-merger accounting data and, especially, financial ratios from financial statements which have been examined for their credibility is a better and safer path to test directly for changes in post-merger performance that result from mergers than stock price studies².

From this point of view, several past studies on post-merger performance after M&As that employed accounting characteristics (financial ratios) concluded on ambiguous results (Pazarskis, 2008). Many of them supported an improvement in the business performance after the M&As action (Cosh et al., 1980; Parrino & Harris, 1992; and others), while other researchers claimed that there was a deterioration in the post-merger firm performance (Meeks, 1977; Salter & Weinhold, 1979; Mueller, 1980; Kusewitt, 1985; Neely & Rochester, 1987; Ravenscraft & Scherer, 1987; Dickerson et al., 1997; Sharma & Ho, 2002; and others), and others researchers concluded a "zero" result or ambiguous results from the M&As action (Kumar, 1984; Healy et al., 1992; Chatterjee & Meeks, 1996; Ghosh, 2001; and others).

Methodology and selection of accounting variables

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&As action similar to the impact of any other positive NPV investment of the

¹ For an extensive literature review about the motives for M&As, in general, see: Jensen, 1986; Ravenscraft & Scherer, 1987; 1988; Pazarskis, 2008.

² The abnormal returns in order to be calculated with the market model depend on the market index. According several past researches (Spyrou, 1998; Michailidis et al., 2006; Artakis et al. 2010) the Greek market index which is called the General Market Index of the Athens Exchange needs to be redefined in terms of the way it is structured, because it does not represent the Greek stock market well (Pazarskis et al., 2011). Therefore, this study did not want to be exposed to this factor by using abnormal returns and thus it was concentrated on the financial ratios. Furthermore, the purpose of our study is not to do an event study on mergers so that the abnormal returns to be critical to evaluate our results and test our hypotheses. The scope of this study is to evaluate the performance based on the traditional financial ratios.

firm to its ratios over a specific period of time (Healy et al., 1992; Pazarskis, 2008).

For the purpose of the study, the selected financial ratios for each company of the sample over a three-year period before or after the M&As event are calculated, and the mean from the sum of each financial ratio for the years before is compared with the equivalent mean from the years after the M&As, respectively³.

Furthermore, to test the above research form of hypothesis two independent sample mean t-tests for unequal variances are applied.

Also, the post-merger performance of a firm is evaluated with its post-merger performance at some financial ratios. In this study, sixteen financial ratios are employed, which are tabulated with their code and their calculation analysis at the Table 1.

Table 1. Classification of financial ratios

Code	Variable Name	Description
V01	ROA (Return On Total Assets)	earnings/total assets
V02	ROE (Return On Equity)	earnings/equity

To test the research data two independent sample mean t-tests for unequal variances are applied, which are calculated as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

where,

n = number of examined ratios

$\bar{X}_1$ = mean of pre-merger ratios

$\bar{X}_2$ = mean of post-merger ratios

s = standard deviation

1 = group of pre-merger ratios

2 = group of post-merger ratios

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

Sample and data

From a sample of all M&As, the transactions of listed firms in the period from 2006 to 2009 in Greece are tracked. Secondly, from them for further analysis, are excluded the firms that performed M&As activities in less than a two-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, as well as the firms with bank activities, which present special peculiarities in their accounting evaluation. Finally, they are selected and examined only thirty acquiring firms which is the final firm sample that executed at least one M&As action as acquirers in Greece during the period from 2006 to 2009.

³ In this study, the mean from the sum of each financial ratio is computed 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, 2006; 2009; 2013; 2014a; b; Pramod Mantravadi & A. Vidyadhar Reddy, 2008; and others).

The examined industry sectors of these firms are seven different basic industry categories: industrial companies: 7 firms, medical services: 3 firms, constructions: 3 firms, internet-publications-etc. companies: 4 firms, commercial and tourist companies: 3 firms, information technology: 4 firms, metals and building materials: 6 firms.

The final sample with thirty five M&As events is satisfying as it includes all the M&As events of listed firms in the Greek market at the above referred period (according to the sample criteria of this study) and reliable in comparison to prior accounting studies conducted in significantly larger markets such as US and UK (Sharma & Ho, 2002), with similar sample firms, as: Healy et al., 1992 : $n = 50$, Cornett & Tehranian, 1992: $n = 30$, Clark & Ofek, 1994: $n = 38$, Manson et al., 1995: $n = 38$, etc.

The 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 post-merger performance. Furthermore, it should be remarked that the M&As activities of the listed Greek firms have been tracked from their announcements on the web sites of the ASE. The data of this study (accounting ratios) are computed from the financial statements of the M&As-involved firms and the databank of the Library of the University of Macedonia (Thessaloniki, Greece).

Research hypotheses

In this study the following hypotheses have been formulated:

H_1 : The post-merger performance of the acquiring firms is not expected to have a relative change after M&As.

H_2 : The post-merger performance of the acquiring firms is not affected by industry type.

Data analysis

The study tries to investigate the evaluation of the post-merger performance for the sample firms from many sides in a particular way. Firstly, tries to find the final post-merger performance of the sample firms in general after a three-year-period, and secondly, from the whole sample examines different particular characteristics, such as: the impact of the choice of domestic or international M&As at the post-merger performance of the acquiring firms, and of conglomerate or non-conglomerate M&As.

(i) Post-merger performance - all mergers

The post-merger performance of the sample firms that executed M&As during the period 2006-2009 is evaluating for two years before and after the M&As event. The selected financial ratios for each company of the sample over a two-year period before (year T-2, T-1) or after (year T+1, T+2) the M&As event are calculated, and the mean from the sum of each financial ratio for the years T-2 and T-1 is compared with the equivalent mean from the years T+1 and T+2, respectively.

(ii) Post-merger performance - among different industries

The post-merger operating performance of the sample firms that executed an M&As transaction during the period 2006-2009 is evaluating for two years before and after the M&As event in similar process than the above among the following examined different industry categories: industrial companies, medical services, constructions, internet-publications-etc. companies, commercial and tourist companies, information technology, metals and building materials. The results are discussed in details for each industry category and in comparison among them depicting the existence of eventual special peculiarities.

The results for each hypothesis separately, and by industry analysis, are presented in the following section.

3. Analysis of Results

Post-merger performance - all mergers

The hypothesis H1 of this research is that: "The post-merger performance of the acquiring firms is not expected to have a relative change after M&As". Within this prospect in this section presented the results of the final post-merger performance of the sample firms in general after a two-year-period for M&As activities in Greece.

The results revealed that over a two-year-period before and after the M&As event all of the accounting ratios (ROA; ROE) had change significantly and they actually have a particular negative impact on post-merger accounting performance of merger-involved firms (see, Table 2 for ratio mean analysis). Furthermore, the results of this study revealed that merger decisions of the sample firms, even two years after the M&A transaction, do not lead them to enhanced business performance.

This result is not consistent with the results of some studies such as Kumar, 1984; Healy et al., 1992; 1997; Chatterjee & Meeks, 1996; and Ghosh, 2001. However, it is consistent with the results of some other studies whereby: Neely & Rochester (1987) found a decline of the profitability ratios, especially the ROA, in the post-merger period, for the US market for the year 1976. Sharma & Ho (2002) also found a decline for the ROA and the ROE ratios. Similar results, with a decline of the profitability ratios, have been found by Meeks (1977), Salter & Weinhold (1979), Mueller (1980), Kusewitt (1985), Mueller (1985), Ravenscraft & Scherer (1987); Kaplan & Weisbach (1992); Dickerson et al. (1997). Furthermore, our results for the Greek market, since there is no significant profitability improvement, do not support the hypothesis of market power (Lubatkin, 1983; 1987). According to this approach, the market power that was gained by the acquirer after the merger or the acquisition should increase the new firm's profit margins and therefore, its profitability.

In conclusion, the hypothesis H1 of this research, as there is, in general, a worsening at the post-merger performance of all the acquiring firms, is rejected.

Table 2: Mean pre-merger and post-merger ratios before/after M&As

Variable	Pre-merger (2 years avg.)	Post-merger (2 years avg.)	T-statistic (Two-tail)	P-Value	Confidence Interval 95%
V01	3,43	-0,85	-4,57	0,000 ^a	(-6,135; -2,422)
V02	6,8	-3,8	-4,98	0,000 ^a	(-14,74; -6,34)

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≤p<0.05 moderate evidence against Ho (see, ^b)

0.05≤p<0.10 little evidence against Ho (see, ^c)

0.10≤p no real evidence against Ho

Post-merger performance - among different industries

The hypothesis H₂ of this research is that: "The post-merger performance of the acquiring firms is not affected by industry type". Within this prospect in this section presented the results of the final post-merger performance of the sample firms after a two-year-period for M&As activities in Greece among the following examined different industry categories: industrial companies, medical services, constructions, internet-publications-etc. companies, commercial and tourist companies, information technology, metals and building materials.

The results revealed that over a two-year-period before and after the M&As event all of the accounting ratios (ROA; ROE) had change significantly and they actually have a particular negative impact on post-merger accounting performance of merger-involved firms (see, Table 3 for ratio mean analysis) at five out of seven examined different industry categories. Furthermore, the results of this study revealed that merger decisions of the sample firms, even two years after the M&A transaction, do not lead them to enhanced business performance at none case. Similar conclusions could be made in relation to the previous section, regarding the profitability performance and the hypothesis of market power. In conclusion, the hypothesis H₂ of this research, as there are, in general, different results at the post-merger performance for the examined acquiring firms of each industry, is rejected.

Table 3: Mean pre-merger and post-merger ratios before/after M&As

Variable	Pre-merger (2 years avg.)	Post-merger (2 years avg.)	T-statistic (Two-tail)	P-Value	Confidence Interval 95%
Industrial companies					
V01	2,50	-2,88	-2,34	0,032**	(-10,23; -0,51)
V02	4,24	-4,25	-3,02	0,006***	(-14,33; -2,65)
Medical services					
V01	0,75	0,30	-0,14	0,892	(-8,46; 7,57)
V02	1,16	-6,7	-1,52	0,190	(-21,15; 5,46)
Constructions					
V01	1,48	0,74	-0,42	0,687	(-4,79; 3,30)
V02	4,60	0,89	-1,80	0,106	(-8,38; 0,95)
Metals and building materials					
V01	4,36	0,74	-2,07	0,051*	(-7,25; 0,01)
V02	8,03	-0,5	-2,43	0,026**	(-15,93; -1,14)

Internet-publications-etc. companies					
V01	4,37	-3,93	-3,32	0,009***	(-13,96; -2,65)
V02	13,5	-4,4	-2,48	0,029**	(-33,59; -2,15)
Information technology					
V01	2,49	-1,45	-2,07	0,063*	(-8,13; 0,26)
V02	-0,6	-17,1	-1,95	0,075*	(-35,08; 1,98)
Commercial and tourist companies					
V01	8,36	2,87	-1,79	0,106	(-12,42; 1,43)
V02	17,72	7,84	-1,98	0,078*	(-21,13; 1,38)

Note:

a, b, c: statistically significant at the 0.01, 0.05 and 0.1 level, respectively.

5. Summary and conclusions

M&As are considered as modern aspects in dynamic strategic management and finance with the implementation of contemporary corporate restructuring and the combination of different business entities into one new firm. However, many researchers and business practitioners are confident and enthusiastic, while others regard with scepticism this statement.

This study examines the success of merger decision of acquiring firms in Greece among different industries using accounting data (financial ratios) after two years of their M&As transactions. For the purpose of the study, a set of two ratios (ROA and ROE) is employed, in order to measure thirty firms' post-merger performance per industry, as well as on the whole sample, and selected accounting data from 2006 to 2009 are compared for the post-merger performance of the sample firms at two years after the M&As events. The examined industry sectors are seven different industry categories: industrial companies, medical services, constructions, internet-publications-etc. companies, commercial and tourist companies, information technology, metals and building materials companies.

Within this prospect, this research examines with its hypotheses: (1): if the post-merger performance of the acquiring firms is not expected to have a relative change after M&As, and (2): if the post-merger performance of the acquiring firms is not affected by industry type. The results revealed for the examined firms of each industry different results per industry and that there is after their M&As, in general, a worsening at the post-merger performance. From this could be presumed that their post-merger performance was affected by their different industry type. Also, M&As have not provided a better post-merger performance for the acquiring firms on the whole examined sample.

Last, future extensions of this study could examine a larger sample that could include not only M&As-involved Greek firms listed in the Athens Exchange, but also non-listed firms and within other or larger time frame periods.

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