Performance of the Greek banking sector pre and throughout the financial crisis

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Abstract

This study provides an in depth comparative analysis among Greek Commercial Bank institutions listed in Athens Stock Exchange Market, during time period from 2006 to 2012. The analysis is based on CAMEL methodology. The period 2007 to 2009 is characterized by high profitability, liquidity and high capital adequacy. However, the eruption of the economic crisis in Greece during 2009 and its ominous impacts is revealed on the bank financial statements and reports. The results derived from the CAMELS evaluation have been cross-tested using the Fixed Effects Model in a panel data analysis, which verify that before crisis the traditional ratios of are statistically significant, while the Sensitivity and Liquidity variables appeared to be the only rating components that provide insights into the banks financial situation during the crisis period. We conclude that changes in the economic environment and the emergence of new risks should be considered from both, bank managers and regulators, by the implementation and evaluation of Banks' rating system.

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1   Introduction

The year 2008, as it has evolved mainly during the last six months of the year, was a difficult period for the economy and the international financial system which has undergone an unprecedented crisis, creating spillover effects and the Greek Banking Sector.
In this research we attempt to filming the negative effects of the crisis on banks' profitability.

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The main objective of this study is to give an in depth comparative analysis of the efficiency among Greek Commercial Bank institutions listed in Athens Stock Exchange Market, during time period from 2006 to 2012.

This analysis consists of two time periods of comparison of the financial institutions. The first period refers to the years 2006 until 2009, and is characterized by their increase in profits and their credit expansion in Greece as well as in other countries abroad. The second period examines the years from 2009 until 2012 and outlines the consequences which the financial crises burst in Greece, during 2009, had on these institutions.

Bank institutions shown major losses, stated capital decreases while, in many cases, had to face with the bankruptcy risk. The performance of banks in terms of dealing with market risk is remarkable, since it was discovered that the banks did not have significant exposure to market risk. Nevertheless, efforts were made to achieve proper management and limitation of their expenditure. Some of these banks were deemed non-viable and were absorbed by other, stronger banks. In 2011 the number of banks dropped to eight, and in 2012 to seven. In 2013 the number of listed banks dropped further to five. The five surviving banks are Eurobank, Piraeus Bank, the National Bank of Greece, Alpha Bank and Attica Bank.

The paper is developed as follows: Section 2 discusses the literature review concerning the analysis of the profitability of the Greek Banking Sector. Section 3 presents the methodology used and the data sources. Section 4 presents the results obtained from the analysis and, finally, in section 5 reports our conclusions and spells out certain policy implications, which are followed by the references.

2   Literature review

The profitability of the banking sector is a key issue in the new configurable economic environment. It is more crucial in the last years because a significant number of banks failed during the recent financial crisis worldwide.

However, the profitability and efficiency of the banking institutions may not be easily measurable and this is due to the unspecified nature of their products and services (Kosmidu and Zopounidis 2008).

Many researchers have tried to measure the profitability of the banking sector, and this is the reason for the numerous studies on the issue, both worldwide as well as in Greece. Below is a brief presentation of the studies which have been carried out in recent years on the analysis of the profitability of the Greek Banking Sector, as well as on the strength of the Banking Sector elsewhere.

Tsionas, Lolos and Christopoulos (2003) investigate the performance of the Greek banking system for the period 1993-1998. The beginning of the period under consideration coincides with the acceleration of liberalization and unnormalisation procedure of the Greek financial system ahead of the country's accession to EMU. The results showed that the majority of Greek banks operate close to the best market practice.

Halkos and Salamouris (2004) using economic indices in conjunction with the Data Envelopment Analysis (DEA) method, examine the effectiveness of the Greek banking sector for the period 1997-1999. The results showed that the higher the assets of the banks

the higher is their efficiency. Besides, the performance of the banks shows wide variations and it turns out that the increase in profitability is due to a reduction in the number of small banks due to mergers and acquisitions.

Rezitis (2006) investigates the productivity and technical efficiency of the Greek banking sector for the period 1982-1997. Specifically, the periods 1982-1992 and 1993-1997 are compared, because after 1992 the Greek banking sector has undergone significant changes. The findings showed that profitability was higher after 1992 and this can be attributed to technical progress. In addition, after 1992 the net profitability was higher and the efficiency scale lower, indicating that although the banks were able to achieve higher net profitability, they moved away from the optimal level. Finally, the Tobit model showed that the size and the skills have positive effects in both, the net profitability and the efficiency scale.

Pasiouras (2008) investigated the efficiency of the Greek commercial banking sector for the period 2000-2004. The findings showed that the inclusion of provisions for losses on loans in inputs increase efficiency, while the off-balance-sheet items do not have a significant contribution to the results. Also, the banks which have developed their businesses abroad appeared to be more profitable than those which operated at national level. The highest capitalization, loan activity and market power increase the profitability of banks. The number of branches also has a positive and significant impact on profitability, while the number of Automated Teller Machines (ATMs) has not.

Siriopoulos and Tziogkidis (2010) studied the profitability of Greek commercial banks for the period 1995-2003. The empirical results were used to examine the reaction of the banking institutions on major events such as mergers, acquisitions, privatizations and the crisis on the Athens Stock Exchange in 1999. The findings show that the Greek banking sector operates efficiently on average in periods of destabilization.

Schiniotakis (2012) searches the factors that affect the profitability of the Greek commercial and cooperative banks and examines the performance of the banks before and during the crisis in Greece and, in particular the period 2004-2009. The findings showed that the type of bank plays an important role in profitability. The ROA ratio is exclusively related to the adequately capitalized banks with sufficient liquidity and cost effectiveness. Also, the cooperative banks at the beginning of the crisis affected less than the commercial banks.

Varias and Sofianopoulou (2012) evaluate the profitability of the larger commercial banks operating in Greece in the year 2009. The results show that, of all the 19 banks that were considered only 6 were profitable. The survey shows the great effort, particularly at management level, that has to be taken by non-profitable units in order to increase their output and to become profitable.

Several studies have been conducted before and during the recent economic crisis, attempting to evaluate the banking sector performance in several Asian countries, such as India (Sangmi & Nazir, 2010; Said & Tumin, 2011), Pakistan (Kouser, R., & Saba, I. (2012), Singapore (Clair, 2004), China (Heffernan & Fu, 2008; Said, & Tumin, (2011), Malaysia (Said, & Tumin, 2011; Sufian, & Habibullah, 2010), United Arab Emirates (Al-Tamimi, 2010), Hong-Kong (Gerlach, S., Peng, W., & Shu, C. (2004), Jordan (Khrawish, H. (2011)...

Relevant researches have investigated bank performance in African countries, such as Nigeria (Oladele & Sulaimon, 2012; Ogege, Williams, & Emerah, 2012; Oladejo, & Oladipupo, 2011), Egypt (Naceur, 2003), Tunisia (Ayadi, & Boujelbene, 2012), Kenya

(Shipho, & Olweny, 2011), South Africa (Ifeacho, C., & Ngalawa, H. (2014); Greenberg, & Simbanegavi, 2009; Kumbirai, M., & Webb, R. (2010; Ncube, 2009).

Ifeacho and Ngalawa. (2014) investigated the South African banking sector for the period 1994-2011 using the CAMEL model of bank performance evaluation and find that "all bank-specific variables are statistically significant at conventional levels for both return on assets (ROA) and return on equity (ROE)". The study shows "a positive relationship between interest rates and bank performance; and a negative relationship between bank performance, on the one hand, and the rates of unemployment and interest rates on the other" (Ifeacho and Ngalawa., 2014 pp 1191).

Bordeleau, & Graham, (2010) have examined the impact of liquidity on the profitability banking sector in Canada, and concluded that "Canadian banks may have needed to hold less liquid assets over the estimation period than did U.S. banks, in order to optimize profits".

Řepková Iveta (2012) estimated the market power in the Czech banking sector during the period 2000 2010. The result of the research show that "the Czech banking market could be described as a moderately concentrated market over the period of 2000–2010", and the Czech banking sector as well as the credit and deposit markets operate between monopoly and the perfect competition , with lowest competition was estimated in the Czech deposit market.

Gasbarro, D., Sadguna, I. G. M., & Zumwalt, J. K. (2002) examined the changing financial soundness of Indonesian banks during this crisis using CAMEL ratios and panel data analysis. They concluded that "four of the five traditional CAMEL components provide insights into the financial soundness of Indonesian banks", but "during Indonesia's crisis period, only one of the traditional CAMEL components—earnings—objectively discriminates among the ratings. The panel data results indicate systemic economy-wide forces must be explicitly considered by the rating system".

The aim of this work is to analyze the efficiency and assess the risk (rating) of the listed in Athens Stock Exchange commercial banks for the period 2006-2012. The analysis includes two periods of comparison of banking organizations. The first period covers the years 2006-2009 and is characterized by increasing profitability and credit expansion both in Greece and abroad. The second period examines the years 2009-2012 and captures the impact on the banks of the economic crisis in Greece which erupted in the year 2009.

3   Methodology and research sample

The research analysis of profitability through financial ratios is a parametric method, one of the most widely used and has been widely applied for the measurement of the profitability of the banks since it is a useful diagnostic tool which can identify quickly and in simple form important information of a company.

The financial ratios enable the evaluation of the financial situation of an enterprise, in the past, present and future, with a target to reveal the strengths and weaknesses of the firm. The financial analyst must choose the most revealing details of the activity of the company and set up the appropriate ratios which illuminate the activity more effectively.

The main advantage of the analysis with financial ratios is its ability and effectiveness to distinguish the banks with high efficiency than others, and the fact that compensates the disparities and monitors the effects of any economic variable studied. Besides, financial ratios can help to identify the strengths and weaknesses of a bank and provide detailed information on the profitability, liquidity and the credit quality policies of a bank (Kumpirai and Webb, 2010).

The calculation and presentation of various financial ratios is a method of analysis which often provide only indications. For this reason, only one ratio is not possible to give complete picture of the financial position of a company, if it is not compared with other standard ratios or if it is not linked to its respective indicators of previous years. Also given the fact that the data are derived exclusively from the financial statements, the administration of a company has the ability to take steps which have as their objective the distortion of ratios and the presentation of a desired image to the users of the financial statements (Vasiliou and Iriotis, 2008) Analysis with financial ratios focuses more to reveal relations between information of the past while users of financial data are interested in particular for the current and future information.

3.1   The sample of the research

For the purpose of the analysis all banking institutions which were listed in Athens Stock Exchange during the year 2011were selected. The reason for selecting this specific year for the sample selection was to include as many banks as possible, because after 2011 the cycle of mergers began which resulted in the deletion of the Commercial Bank and the suspension of shares trading of other banks such as the Agricultural, the Post Bank, the Bank of Cyprus etc.

The sample consists of the following thirteen (13) banks:

1. Agricultural Bank	8. T – Bank
2. Alpha Bank	9. Bank of Cyprus
3. General Bank	10. New Proton Bank
4. Piraeus Bank	11. Attica Bank
5. Post Bank	12. Eurobank Ergasias Bank
6. National Bank	13. Cyprus Popular Bank
7. Commercial Bank	

The above banking institutions differ in their size and ownership but also show a relatively uniform as to the services offered.

For the analysis purpose data were drawn from the following sources:
- Analysis of Income Statement
- Annual Activity Report.
- Supervisory Reports submitted by banks to the Bank of Greece.
- Reports of the Internal Audit Service of the banks and the Auditors who control their Financial Statements.

3.2   CAMELS Ratios Methodology

Because of the special nature of the banking institutions in relation to other businesses it is appropriate to use specialized ratios for their financial evaluation. A very popular method which uses a group of specialized financial ratios is known as CAMELS ratios analysis.

The CAMELS methodology was developed in 1979 on a proposal by the Federal Financial Institutions Examinations Council (FFIEC) and is based on the evaluation of 6 critical elements of the financial institutions operation: Capital, Asset quality, Management, Earnings, Liquidity, Sensitivity. The choice of the CAMELS methodology factors is based on the idea that each one represents an important element in the financial statements of the bank (Dash & Das, 2009).

The CAMELS ratios consist a reliable method of assessing risk of banking institutions and constitute an alternative or additional way assessment of banks in relation to the assessment of the International Credit Rating Agencies. In Greece they are used extensively for supervisory purposes, since both quantitative and qualitative characteristics of the banks are taken into account.[4]

The methodology selected for this study is the analysis with the specialized for banks ratios, the CAMELS. It offers a quick and reliable assessment of the profitability of banking organizations and is easy to implement.

3.3   Calculation of CAMELS ratios

This method requires the calculation of specific ratios which are presented below:

3.3.1(C): Capital adequacy ratio

CAR ratio indicates the strength of a bank expressed by the adequacy of its capital in relation to their risk -weighted exposures. The ratio is expressed as a percentage of a bank's risk weighted credit exposures and its value should be greater than 8%.

1. TIER 1: equity (common and preferred shares, convertible bonds, minority stakes rights of the bank subsidiaries).
2. TIER 2: Hybrid Funds (funds from bonds issued by the bank and uses them as capital. In other words, these consist foreign capital but have the characteristics of equity.

Total Capital = Tier 1 Capital + Tier 2 Capital

Tier 1 Capital = Common Equity Tier 1 + Additional Tier 1\

$$CAR = \frac{\text{Common Equity Tier 1 + Additional Tier 1 + Tier 2 Capital}}{\text{Risk-weighted Exposures}}$$

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[4] http://www.bankofgreece.gr/Pages/en/Supervision/Diavoulevseis/default.aspx

The highest value of this ratio the less need there is for external funding and therefore more efficient than other banks with lowest index capital adequacy and more higher is the protection given to the investors.

3.3.2 (A): Asset quality

Asset quality ratio is calculate as follows:

$$A = \frac{\text{Net-Non Performing Assets (loans overdue more than 30 days- Provisions)}}{\text{Loans}}$$

The numerator includes the total amount of loans overdue more than 90 days (the time as defined by the rules of Basel), reduced by reserve capital of the bank to cover possible losses from overdue loans. This ratio should be kept as small as possible, which means that the provisions for overdue loans are close to actual delays. This means correct forecasting which makes the portfolio reliable and of good quality.

3.3.3 (M): Management capability

Management ratio is calculated as follows:

$$M = \frac{\text{Management expenses}}{\text{Net Operating Revenues}}$$

Lower values of this ratio suggest better management quality of the bank.

The ratio shows the proper (effectively) operation of the bank and the ability of the management to restrict each form of risk inherent in any activity of the bank. The numerator shows the administrative costs which is related to the general operating costs of the bank. The denominator includes revenues and in particular interest and similar income.

3.3.4 (E): Earnings

The Earnings ratio consists of two individual indicators (ROA, ROE) which shall be calculated as follows:

$$ROA = \frac{\text{Net Profits}}{\text{Average Total Assets}}$$

It reflects the profitability of the bank in relation to the total assets, while it also shows how a bank manages its assets to achieve profits.

The higher the ratio, the better the efficiency of the bank's assets, therefore the more efficient the management of its assets.

3.3.5 (L):Liquidity

Liquidity ratio consists of two individual ratios, L1 and L2 which are calculated as follows:

$$L1 = \frac{\text{Total Loans}}{\text{Total Customer Deposits}}$$

The result of this ratio shows the dependence of the bank from the interbank market.

It displays the relationship between the liquid assets of the total current assets to current liabilities of the bank.

The target for the bank is to finance the loans granted out from the deposits (and still having some funds for reserves). In other words, the bank should not have to borrow in inter-bank market to grant loans.

The smaller is the ratio the better is the liquidity of the bank. The ratios' value lower than the unit (1) is interpreted as security in case of allocations, since the deposits are sufficient for the granting of loans.

The second liquidity ratio is as follows:

$$L2 = \frac{\text{Current Assets}}{\text{Average Total Assets}}$$

The result of this ratio shows the extent of (indirect) liquidity of the bank with regard to its current assets. In other words, the immediate liquidable assets, such as the receivables from interbank and from customers, cash and securities (investment portfolio and portfolio transactions of holding bonds to maturity).

The higher the value of the ratio the greater the liquidity of the bank.

This implies a large current assets, which, however, entails substantial costs for the bank, which prefers to come from deposits.

For the determination of the liquidity ratio the procedure is the same as the profitability ratio, and it is calculated as the average of the two individual indicators L1 and L2. The greater the L ratio, the better is the bank under consideration.

3.3.6 (S): Sensitivity

Sensitivity ratio is calculate as follows:

$$S = \frac{\text{Total Volatile Liabilities}}{\text{Average Total Assets}}$$

The ratio refers to everything that is subject to an increase of market risk such as the securities (shares, bonds, derivatives, mutual funds). It shows the performance obtained by the securities portfolio of the bank.

The bank should pursuit to keep the ratio low, which implies that the bank will react better to market risks.

The CAMELS ratios provide for each bank a rating for the overall performance and six individual scores for each ratio category separately. Based on a weighting for each of the six ratios the overall condition of the bank under consideration is revealed.

The weights used and assigned to each ratio are presented:
Weights by risk category:
Capital Risk = 20%
Assets Risk =20%
Management Risk= 20%
Earnings Risk = 10%
Liquidity Risk = 20%
Sensitivity to Risk = 10%
The provision of camels indicators defined as follows:
       The grading scale ranges from 1 to 5 where 1 is the highest rating and reflects the excellent performance and the existence of adequate mechanisms for managing risk while the 5 corresponds to the lowest rating and the bank is considered of low performance (Christopoulos and Ntokas, 2012).

3.4 Panel data methodology

Besides, the results derived from the CAMELS evaluation have been cross-tested using panel data analysis to see whether a proposed scheme by regulators is explained satisfactory over the first sub-period and how this is affected by adding the years of Greek crisis. Panel data procedures allow the simultaneous investigation of a system of equations that consider both firm-specific characteristics and changes over time[5]
In this paper the whole range of data of 2006-2012 is divided into three periods: pre-crisis period of 2006-2008 years, 2009-2012 years as crisis period and the entire period 2006-2012 for independent variables. We use a panel data sample and fixed-effects model following Greene (1997, 1998).
The linear model used has the following form:

$D=\alpha+\beta P+\gamma CF+\delta L+\varepsilon E+u$

Multiple regression provides the statistical results for determining whether a variable is important by checking the zero case Ho: bi=0 against the alternative H1: bi#0. If the Ho is not rejected for some value of i this means that this variable does not have a significant contribution and it is removed from our model.
Panel Data, Fixed Effects Model and Random Effects Model
For the purpose of applying panel data in an econometric analysis it is necessary to have a specific structure, so that the stratification unit (in this case the companies) is linked to the unit of time to which it refers. It is also normal to panel data the number of cross sectional data to be larger in comparison with the number of periods and in this case we focus is the heterogeneity due to the effects non-observed variables.

The model
Our basic model has the form:
$Y_{it} = \beta_0 + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \ldots + \beta_\kappa X_{it,k} + \alpha_i + u_{it}$
where :
Y_{it} = the observation of unit i the depended variable Y for i=1,2, ... ,N and t=1,2, ... ,T.

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[5] Further benefits and limitations of using panel data procedures are summarized in Baltagi (1995).

Xit,j = t observation of unit i of the interpretative variable Xj for i=1,2, ... ,N, t=1,2, ... ,T and j=1,2, ... K

αi = non-observed factors affecting the dependent variable, which do not change over time.

uit = the error temperament which is affecting over time the dependent variable. The graph ai +uit is also known as composite error.

The main assumptions referred to the unobserved effects are:

Model of Required or Fixed effects, with the following form:

$$Y_{it} = \beta_0 + \beta_1 X_{it,1} + \beta_2 X_{it,2} + \ldots + \beta_\kappa X_{it,k} + \alpha_i + u_{it} \, , \, \text{Cov} \, (\alpha_i, X_{it}) \neq 0$$

In contrast with the Fixed Effects Model in which the aim is to eliminate the unobserved effect, the Random Effects Model does not imply that after, since the fixed effect is not associated with the explanatory variables of the model. The fixed effects model uses dummy-variables which allow the cut-off terms to vary both in cross-section between the banks, as well as over the time period.

For each period the average value of every variable is calculated for each company, thus two different regressions are analyzed. Averages are used to minimize the measurement error and effects of random fluctuations for these years.

4   Data analysis and Results

The comparative analysis of Banks for every year of the study (2006-2012), based on CAMELS ratios is presented in the tables of the Appendix. The classification of the banks in the period under consideration according to the results of the comparative analysis is presented in the following table 1. The verification of the place of each bank is also explained in the following section. The panel data analysis is followed in order to verify or reject the CAMELS ratios.

4.1 CAMELS Data Analysis

The analysis of the banks efficiency over time as well as for each year for comparison purposes is followed.

Table: 1 The classification of banks in the period under consideration based on the results **of the comparative analysis**:

Ranking	2006	2007	2008	2009	2010	2011	2012
1	National	National	National	Bank of Cyprus	Bank of Cyprus	Eurobank Cyprus Popular Bank	Eurobank
2	Alpha Cyprus Popular Bank	Bank of Cyprus	Bank of Cyprus	National	Post bank	National Alpha	Piraeus National General
3	Piraeus Tbank	Eurobank	Eurobank	Attica Bank	Alpha Attica Bank	Bank of Cyprus	Alpha
4	Eurobank	Piraeus	Piraeus	Eurobank	National	Attica Bank	New Proton
5	Post bank	Cyprus Popular Bank	Alpha Cyprus Popular Bank	Alpha Cyprus Popular Bank	Piraeus	Piraeus	Attica Bank
6	Agricultural	Attica Bank Tbank	Tbank	Piraeus Post bank	Eurobank	General	
7	Bank of Cyprus	Alpha	Attica Bank	Agricultural	Cyprus Popular Bank		
8	Attica Bank	Agricultural	Agricultural	New Proton	New Proton		
9	New Proton	Post bank	Post bank	Commercial	Agricultural General Commercial		
10	Commercial	New Proton	New Proton	General	Tbank		
11	General	General	Commercial	Tbank			
12		Commercial	General				

We notice that the best scores over time are achieved by the National Bank with the exception of the last few years when it ranks in the second position, which is obviously due to the economic crisis and in particular to the participation in PSI.

In second place rank both the Bank of Cyprus and the Alpha. In particular the Cyprus starts in 2006 from the seventh position because of the major problems it faces related to the quality of its loan portfolio. Then it climb in second position and the two years 2009-2010 sprayed to the top. From there after its route is decreasing because of the significant problems which led in 2013 to its acquisition by the Piraeus. Alpha bank ranks in the second position the first year but it falls in much lower ranking positions. Subsequently, the bank shows ascending course and climb in 2011 again in second place. In 2010 the Postal Savings Bank ranks in second place and is due to the fact that it has high capital adequacy (18 %) after the share capital increase carried out in the previous year. In 2013 Postal Savings Bank was absorbed by the Eurobank.

In the third place rank mainly the Eurobank and the Attica Bank. The Eurobank appears to have greater strength during the crisis compared to other banks, while in the last two years rises to the forefront of the ranking list. The route of the Attica bank is also remarkable, which the first year of analysis is located in the lower positions and gradually strengthened and climb to the third position in the years 2009 and 2010. These yields are due to the improvement in the capital adequacy (11% 2008, 17% 2009, 19% 2010). The next two years, affected by the crisis, Attica bank occupies the 4th and 5th position respectively.

In the fourth place during the first years of the analysis, ranks Piraeus bank, while in 2009 and after it falls to a lower place. In 2012 it climb in second position because during the year absorbed the healthy part of Agricultural bank and General bank.

The fifth position occupied by the Cyprus Popular Bank (CPB). The CPB despite its ranking in second place during 2006 it falls the next few years in the lower positions of the classification but it climb up to the first position in 2011, mainly because of the higher capital adequacy it maintains and the profitability compared with other banks. In 2013 CBP is absorbed by the Piraeus bank.

T-bank is placed in third place in 2006 but declines over the following years and is ranking in the last place during 2009 and 2010. In 2011 it is absorbed by the Postal savings bank. The other banks are mainly between the sixth and twelfth position. The New Proton succeeds in 2012 to win the fourth position. In 2013 it is absorbed by the Eurobank.

he last position is occupied mainly by the General bank which in 2012 reaches the second position. This year it is absorbed by the Piraeus bank.

According to the finding of this study, the highest rates for the majority of the examined banks are stated during the period 2007 to 2009. This period is characterized by high profitability, liquidity and high capital adequacy. However, the eruption of the economic crisis in Greece during 2009 and its ominous impacts is revealed on the bank financial statements and reports. Specifically, during the years 2010 to 2012 banks reached their worst ratings.

As far as Bank Efficiency Comparative Analysis is referred, the National Bank appears to be the most efficient among all banks, holding the highest position in the ranking scale of CAMEL rating during the majority of the years. On the contrary, Geniki Bank is found at the lowest ranking scale.

4.2   Panel Data Analysis

In order to verify or to reject the CAMELS evaluation, we have appreciated the equation (1) the least squares method (OLS) and the Fixed Effects Model for the period before, after the crisis as well as for the entire period. Therefore we estimated the following equation over three sub-samples:

CAMELS = a1+a2*Capital adequacy + a3*Asset quality + a4*Management capability + a5*((Earnings (ROA) +Earnings (ROE))/2) + a6*((Liquidity (Loans) + Liquidity (assets))/2) + a7* Sensitivity   (1)

<u>Variable definition and expected sign</u> (See section 3.3, (Calculation of CAMELS ratios))**:**

<u>Depended</u> Variable: *CAMELS* (rating 1-5). The indicator with the lowest grade (1) corresponds to perfectly and respectively the highest (5) to worse. Banks with the lowest score per year shall be deemed to have the best performance.

<u>Independed variables:</u>

Capital adequacy (-) : A higher value indicates greater efficient and a negative relationship with a higher (worse) CAMELS rating

Asset quality (+): This ratio should be kept as small as possible. A higher value of this ratio indicates a higher (worse) CAMELS rating

Management capability (+): Lower values of this ratio suggest better management quality of the bank. A higher value of this ratio indicates a higher (worse) CAMELS rating

Earnings (ROA+ROE)/2 (**-**): A higher value indicates greater   profitability and a negative relationship with a higher (worse) CAMELS rating

Liquidity : (Liquidity L1 (Loans) +Liquidity L2 (assets))/2)

L1 (+) the smaller is the ratio the better is the liquidity of the bank and a positive relationship with the CAMELS rating

L2(-) The higher the value of the ratio the greater the liquidity of the bank and a negative relationship with the CAMELS rating

Sensitivity (+)*:* The bank should pursuit to keep the ratio low, which implies that the bank will react better to market risks. The higher the value of the ratio the higher (worse) CAMELS rating.

The E-views statistical package and the least squares method have been applied in a panel data analysis for the estimation of coefficients of linear regression in Linear Model without effects, on the Fixed Effects Model in cross section fixed elements, as well as the Random Effects Model in cross section random. The likelihood of multicollinearity has been tested with Correlation Analysis of the variables and the test showed values between $-0.5 < \rho < 0.5$. The results of the OLS and panel data regressions for three separate time periods are presented in Table 2.

Table 2 . Panel data regressions							
Panel A: Before crisis period							
Description		**OLS Model**			**Fixed Effects Model**		
Adjusted R^2		0,768433			0,936472		
Observations		47			47		
F-value		0,000011	**		0,000032**		
Log-likelihood		1.773.724			2.087.177		
Chi-square							
Hausman statistic					91,12*		
Durbin Watshon					1,10		
CAMELS Variables	Coefficient		t-Ratio	Coefficient		t-Ratio	
Capital adequacy	-8,583836		-2,485913	**	-8,612019	-2,343270	**
Asset quality	3,222684		1,317995		4,392631	1,827694	*
Management capability	3,222684		2,997780	**	8,281524	5,496210	**
Earnings	-0,302210		-0,719158		-0,733051	-1,832893	*
Liquidity	0,763887		1,021218		0,641915	0,766204	
Sensitivity	0,438834		0,370241		2,165448	1,591594	

		Panel B: During the crisis period						
Description		OLS Model				Fixed Effects Model		
Adjusted R^2		0,85127				0,95817		
Observations		44				44		
F-value		0,00002				0,00001		
Log-likelihood		1.236.947				1.571.327		
Chi-square								
Hausman statistic Durbin Watshon						95.41* 1.01		
CAMELS Variables	Coefficient		t-Ratio		Coefficient		t-Ratio	
Capital adequancy	8,423232		2,260871	*	6,262649		1,603674	
Asset quality	4,118952		1,386669		1,984872		0,695709	
Management capability	4,229358		2,186391	*	2,907182		1,528189	
Earnings	0,298954		0,711396		0,731048		1,827564	*
Liquidity	2,076451		1,1918271	*	2,055643		2,070411	*
Sensitivity	4,526316		2,754750	**	2,796441		1,768621	*

		Panel C: Total Period 2006-2012						
Description		OLS Model				Fixed Effects Model		
Adjusted R^2		0,711810				0,822541		
Observations		91				91		
F-value		0,00001				0,00002		
Log-likelihood		-94.42373				-72.36169		
Chi-square								
Hausman statistic Durbin Watshon						98.00* 1.77566		
CAMELS Variables	Coefficient		t-Ratio		Coefficient		t-Ratio	
Capital adequancy	0,8110684		1,326141		-2,372825		- 1,649470	
Asset quality	7,501372		1,492137	**	6,905781		4,625593	**
Management capability	7,120947		1,000139	**	10,44130		7,888686	**
Earnings	-0,003042		0,002847		-0,001907		- 0,739434	
Liquidity	1,884991		0,559919	*	1,835489		2,941276	*
Sensitivity	3,894717		0,854903	***	5,199533		5,400513	**

Note: The statistics presented above are based on the fixed effect model (The fixed effect model was identified by the Hausman statistic as appropriate.
*indicates significance at the 0,05 level.
**indicates significance at the 0,01 level.

We observe that more generally and in particular for the period during the crisis, just 76% (adjusted R^2) of the total variability of the CAMELS ratios can be explained by the linear regression model OLS. However, the explanatory capacity of the Fixed Effects Model appears much better in both periods with prices (adjusted R^2) 93% and 95% respectively. From the value of Durbin-Watshon we can see that there is a first degree correlation as it takes values from 1.10 before crisis and 1.01 after crisis and 1.77 in total period, which lie between zero and two. The high statistical criterion (Hausman) shows that the Fixed Effects Model is more appropriate than the Random Effects model. For this reason in our interpretive analysis we choose the results of Fixed Effects Model.

Results: Before crisis period (2006-2008)
For the period 2006-2008 the model demonstrates quite high R^2 value (0.93), indicating that the independent variables explain at a reasonable percentage the change of the depended variable (CAMELS ratios). The statistical values, t-statistic and the probability function -probability (Prob. >0.05) show that in the pre - crisis period the variables do not affect the CAMELS ratios (statistically non-significant). However, the independent variables Capital adequacy, Asset quality, Earnings are statistically significant at a level of 90%, while the Management capability variable is statistically significant at a level of 99%. Besides, all variables display the expected sign which is in accordance with the CAMELS methodology.

Results: For the period after the crisis (2009-2012)
During the period after the outbreak of the crisis (2009-2012), according to the value of t-statistic and the probability function (Prob. >0.05), we ought to accept that the variables Capital adequacy, Asset quality and Management capability, cease to affect significantly in shaping the CAMELS ratios, compared to the previous period, while the Earnings variable remains statistically significant at a level of 90 %. Statistically significant appear for the first time the variables of Sensitivity and Liquidity at levels of 90% and 95% respectively, revealing the significance of the profitability value , the greater exposure to risk of their assets, i.e. increase of market risk such as the securities (shares, bonds, derivatives, mutual funds) and the major lacking of Liquidity which characterizes this period.

Table 3 : Overview of the Fixed Effects Model results

CAMELS Variables	Before crisis period (2006-2008)	Crisis period (2009-2012)	Total Period (2006-2012)
	Coefficient with CAMELS	*Coefficient with CAMELS*	*Coefficient with CAMELS*
Capital Adequancy	-8,612019*	6,262649	-2,372825
Asset Quality	4,392631*	1,984872	6,905781**
Management Capability	8,251524**	2,907182	10,44130**
Earnings	-0,733051*	0,731048*	-0,001907
Liquidity	0,641915	2,055643*	1,835489*
Sensitivity	2,165448	2,796441*	5,199533**

The Eight variables for the CAMELS Model are: Capital Adequacy, Asset Quality, Management Capability, Earnings (ROA), Earnings (ROE), Liquidity (Loans), Liquidity (assets), and Sensitivity
*indicates significance at the 0,05 level ,**indicates significance at the 0,01 level.

Results: For the overall period (2006-2012)

Based on the same methodology for the total of the period under study (2006-2012) we realize that the variables Capital adequacy and Earnings do not affect over time CAMELS ratios. Over time effects appear to have the Liquidity variables, which is statistically significant at 90% and the Asset quality Management capability and Sensitivity at a level of 99%.

5   Conclusions and Discussion

In this study we aim to analyze the efficiency of publicly traded banks for the period 2006-2012. To fulfill this goal we have used the specialized CAMELS ratios. According to the findings of the study, the best scores of the total of the banks happened in the period 2006-2009. In particular, 2007 is considered the best year graduated. From the analysis of profitability ratios (ROE, ROA) and liquidity (L1, L2) of the above period shows increased profitability and liquidity of banks, which is mainly due to the expansion of their activity in housing and consumer credit, as well as to their international activity which during the same period was very strongly developed. The capital adequacy of the banks is displayed enhanced in the same period and the quality of their loan portfolio is considered satisfactory.

The contribution of banks to address the economic crisis in their participation to PSI affected adversely their profitability. On the basis of our findings, the period 2009-2012 was the worst in their grading. In particular, the year 2012 turned out for the banks the worst year. The banks recorded losses (before-taxes) of approximately 38 billion euro during 2012. These losses had a serious impact on equity funds. The ratio analysis reveals that the banks have been weakened in capital adequacy while both their profitability and liquidity have been seriously damaged. One major problem for the banks during this period is the splash of loans overdue for more than 90 days.

The performance of the banks in relation to the treatment of market risk is notable. From the low values of the ratio throughout our analysis we can see that the banks were not highly exposed to market risks. Besides, the index administration also seems to keep graduated at low levels even during the crisis, which is mainly due to the efforts made by banks for rational management and cost reduction.

Concerning the comparative analysis of the banks, the National Bank appears to be more effective than all the others, ranking in first place in CAMELS ratings for most of the years of analysis. On the contrary, General bank ranks in the last places. In this unfavorable environment described above several banks were confronted with the risk of bankruptcy. Some of these were considered non-viable and were absorbed by other stronger banks. From our analysis we see that the number of banks in 2011 is reduced to eight and in 2012 to seven. From 2013 onwards the number of publicly traded banks is reduced further, and finally only five banks remain in the market, the Eurobank and Piraeus, the National, the Alpha and the Attica Bank.

The need for recapitalisation of the remaining banks was deemed imperative and was carried out by the Hellenic Financial Stability Fund in 2013. During the year the four banks – Eurobank, Piraeus, National, Alpha- received total aid of 28 billion by configuring the percentage of their equity fund to 98.56 %, 81,01 %, 84,39% and 83,66% respectively. Attica Bank was excluded as a private bank which still remains.

Using additionally Panel Data Regressions Models, our results confirm that during the stable period, that is before the onset of the crisis, the "four CAMELS ratios of the total of six, have significant contribution (statistically significant), in the evaluation of bank institutions and in accordance with the assumptions of the methodology. During the period of crisis (at least in Greece), only the profitability (E) from the previous traditional ratios maintains the effect. Besides, it is demonstrated the importance of the Sensitivity and Liquidity variables, imprinting the greater exposure to risk and the major lacking of Liquidity which characterizes this period. Finally, our results prove that the systems and the methodology for evaluating the bank institutions should be adapted to take into account the changes of the economic environment and the emergence of new risks.

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APPENDIX:

Comparative analysis of Banks per year

Year 2006	CAMELS																		
	C	0,2	A	0,2	M	0,2	E (ROA)		E (ROE)		0,1	L (L1)		L (L2)		0,2	S	0,1	Grade
Eurobank	10%	4	1,0%	2	0,07	1	1%	2	15%	2	2,0	0,99	2	1,05	2	2,0	24%	2	2,200
National	23%	1	1,2%	2	0,09	1	1%	2	10%	3	2,5	0,74	2	0,95	2	2,0	27%	2	1,650
Piraeus	12%	3	1,0%	2	0,13	2	1%	2	21%	1	1,5	1,28	3	1,07	2	2,5	13%	1	2,150
Agricultural	12%	3	2,0%	3	0,14	2	1%	2	12%	2	2,0	0,75	2	0,87	3	2,5	15%	1	2,400
Alpha	13%	2	1,5%	2	0,11	2	1%	2	21%	1	1,5	1,39	3	0,99	2	2,5	18%	2	2,050
General	6%	5	6,4%	5	0,35	4	-2%	4	-61%	4	4,0	1,11	3	0,98	2	2,5	10%	1	3,800
Post bank	11%	3	1,9%	2	0,18	2	1%	2	16%	2	2,0	0,45	1	0,96	2	1,5	52%	4	2,300
Commercial	9%	4	28,0%	5	0,18	2	-1%	4	-30%	4	4,0	0,99	2	1,00	2	2,0	9%	1	3,100
New Proton	16%	1	3,2%	3	0,45	5	0%	3	8%	3	3,0	0,89	2	0,01	5	3,5	0%	1	2,900
Attica Bank	9%	4	3,1%	3	0,22	3	0%	3	0%	3	3,0	0,96	2	1,07	2	2,0	5%	1	2,800
Cyprus Popular Bank	14%	2	2,8%	3	0,07	1	1%	2	4%	3	2,5	0,55	2	1,08	2	2,0	24%	2	2,050
Bank of Cyprus	12%	3	3,0%	4	0,11	2	1%	2	19%	2	2,0	0,63	2	1,03	2	2,0	17%	2	2,600
Tbank	14%	2	0,7%	2	0,25	3	1%	2	6%	3	2,5	0,85	2	1,02	2	2,0	3%	1	2,150
(C)= Capital adequacy, (A)= Assets quality, (M) =Management capability, (E) = Earnings, L1 & L2 Liquidity, (S)=Sensitivity																			

	CAMELS																		
Year 2007	**C**	**0,2**	**A**	**0,2**	**M**	**0,2**	**E (ROA)**		**E (ROE)**		**0,1**	**L (L1)**		**L (L2)**		**0,2**	**S**	**0,1**	**Grade**
Eurobank	13%	2	0,9%	2	0,06	1	1%	2	15%	2	2,0	0,96	2	1,11	2	2,0	18%	2	1,800
National	17%	1	1,2%	2	0,09	1	1%	2	14%	2	2,0	0,80	2	0,93	2	2,0	21%	2	1,600
Piraeus	13%	2	0,7%	2	0,10	1	1%	2	14%	2	2,0	1,41	3	1,12	2	2,5	18%	2	1,900
Agricultural	9%	4	2,7%	3	0,11	2	1%	2	15%	2	2,0	0,81	2	0,98	2	2,0	13%	1	2,500
Alpha	12%	3	1,5%	2	0,11	2	1%	2	17%	2	2,0	1,51	4	1,02	2	3,0	14%	1	2,300
General	12%	3	6,4%	5	0,29	3	-1%	4	-13%	4	4,0	1,19	3	1,00	2	2,5	8%	1	3,200
Post bank	10%	4	1,9%	2	0,16	2	0%	3	6%	3	3,0	0,54	2	1,00	2	2,0	32%	3	2,600
Commercial	8%	5	6,1%	5	0,14	2	0%	3	6%	3	3,0	1,04	3	1,05	2	2,5	12%	1	3,300
New Proton	12%	3	2,1%	3	0,21	3	1%	2	5%	3	2,5	0,83	2	1,05	2	2,0	23%	2	2,650
Attica Bank	13%	2	2,8%	3	0,14	2	1%	3	6%	3	3,0	0,99	2	1,07	2	2,0	3%	1	2,200
Cyprus Popular Bank	11%	3	1,3%	2	0,07	1	3%	1	13%	2	1,5	0,64	2	0,91	2	2,0	16%	2	1,950
Cyprus	13%	2	0,9%	2	0,07	1	2%	2	22%	1	1,5	0,75	2	1,01	2	2,0	14%	1	1,650
Tbank	17%	1	2,6%	3	0,23	3	0%	3	2%	3	3,0	0,93	2	1,04	2	2,0	1%	1	2,200

	CAMELS																		
Year 2008	**C**	**0,2**	**A**	**0,2**	**M**	**0,2**	**E (ROA)**		**E (ROE)**		**0,1**	**L (L1)**		**L (L2)**		**0,2**	**S**	**0,1**	**Grade**
Eurobank	11%	3	1,3%	2	0,05	1	0%	3	6%	3	3,0	0,98	2	1,04	2	2,0	15%	1	2,000
National	16%	1	1,4%	2	0,08	1	1%	2	7%	3	2,5	0,95	2	0,91	2	2,0	17%	2	1,650
Piraeus	11%	3	1,0%	2	0,08	1	0%	3	4%	3	3,0	1,39	3	0,93	2	2,5	12%	1	2,100
Agricultural	8%	4	3,0%	3	0,11	2	0%	3	3%	3	3,0	1,00	2	1,01	2	2,0	10%	1	2,600
Alpha	9%	4	1,2%	2	0,09	1	1%	2	14%	2	2,0	1,25	3	0,98	2	2,5	18%	2	2,300
General	9%	4	7,2%	5	0,20	3	-1%	4	-14%	4	4,0	1,63	4	1,02	2	3,0	9%	1	3,500
Post bank	9%	4	3,6%	3	0,14	2	0%	3	1%	3	3,0	0,62	2	0,93	2	2,0	29%	2	2,700
Commercial	4%	5	6,4%	5	0,10	1	-2%	4	-317%	4	4,0	1,22	3	1,01	2	2,5	8%	1	3,200
New Proton	10%	4	3,0%	3	0,17	2	-3%	4	-20%	4	4,0	1,26	3	0,81	3	3,0	23%	2	3,000
Attica Bank	11%	3	2,9%	3	0,12	2	0%	3	3%	3	3,0	1,15	3	1,01	2	2,5	3%	1	2,500
Cyprus Popular Bank	10%	4	0,7%	2	0,05	1	2%	0	12%	2	2,0	0,76	2	0,89	3	2,5	16%	2	2,300
Bank of Cyprus	10%	4	0,0%	1	0,09	1	2%	2	23%	1	1,5	0,81	2	0,95	2	2,0	14%	1	1,850
Tbank	13%	2	0,3%	2	0,25	3	-2%	4	-38%	4	4,0	0,99	2	0,88	3	2,5	1%	1	2,400

CAMELS																			
Year 2009	**C**	**0,2**	**A**	**0,2**	**M**	**0,2**	**E (ROA)**		**E (ROE)**		**0,1**	**L (L1)**		**L (L2)**		**0,2**	**S**	**0,1**	**Grade**
Eurobank	12%	3	3,1%	3	0,06	1	0%	3	0%	3	3,0	0,92	2	0,93	2	2,0	12%	1	2,200
National	16%	1	2,8%	3	0,09	1	0%	3	3%	3	3,0	1,00	2	0,89	3	2,5	17%	2	2,000
Piraeus	12%	3	1,6%	2	0,12	2	0%	3	5%	3	3,0	1,21	3	0,82	3	3,0	14%	1	2,400
Agricultural	10%	4	3,5%	3	0,10	1	-1%	4	-33%	4	4,0	0,98	2	1,01	2	2,0	15%	1	2,500
Alpha	13%	2	2,4%	3	0,13	2	1%	2	9%	3	2,5	1,19	3	0,88	3	3,0	11%	1	2,350
General	10%	3	12,8%	5	0,23	3	-2%	4	-39%	4	4,0	1,50	3	0,94	2	2,5	8%	1	3,200
Post bank	17%	1	3,1%	3	0,21	3	0%	3	2%	3	3,0	0,62	2	1,01	2	2,0	41%	3	2,400
Commercial	12%	3	11,2%	5	0,16	2	-2%	4	-47%	4	4,0	1,40	3	0,93	2	2,5	6%	1	3,000
New Proton	16%	1	6,5%	5	0,19	2	0%	3	3%	3	3,0	0,84	2	1,11	2	2,0	51%	4	2,700
Attica Bank	17%	1	3,0%	3	0,14	2	0%	3	2%	3	3,0	1,14	3	1,02	2	2,5	6%	1	2,100
Cyprus Popular Bank	12%	3	2,6%	3	0,10	1	1%	2	5%	3	2,5	1,03	3	1,09	2	2,5	28%	2	2,350
Bank of Cyprus	11%	3	0,7%	2	0,10	1	1%	2	10%	2	2,0	0,83	2	0,92	2	2,0	14%	1	1,900
Tbank	6%	5	2,7%	3	0,30	3	-3%	4	-161%	4	4,0	1,02	3	0,97	2	2,5	16%	2	3,300

CAMELS																			
Year 2010	**C**	**0,2**	**A**	**0,2**	**M**	**0,2**	**E (ROA)**		**E (ROE)**		**0,1**	**L (L1)**		**L (L2)**		**0,2**	**S**	**0,1**	**Grade**
Eurobank	12%	3	5,0%	4	0,06	1	0%	3	-2%	4	3,5	1,07	3	0,83	3	3,0	11%	1	2,650
National	19%	1	5,8%	4	0,11	2	0%	3	-4%	4	3,5	1,11	3	0,81	3	3,0	16%	2	2,550
Piraeus	11%	3	2,7%	3	0,13	2	0%	3	0%	3	3,0	1,30	3	0,80	3	3,0	14%	1	2,600
Agricultural	8%	5	5,5%	4	0,09	1	-1%	4	-52%	4	4,0	1,08	3	0,91	2	2,5	17%	2	3,100
Alpha	14%	2	3,8%	3	0,13	2	0%	3	-1%	4	3,5	1,28	3	0,83	3	3,0	13%	1	2,450
General	14%	2	8,3%	5	0,27	3	-9%	4	-209%	4	4,0	1,50	3	0,89	3	3,0	6%	1	3,100
Post bank	18%	1	3,5%	3	0,14	2	0%	3	-5%	4	3,5	0,66	2	0,78	3	2,5	36%	3	2,350
Commercial	12%	3	14,6%	5	0,17	2	-4%	4	-101%	4	4,0	1,72	4	0,93	2	3,0	4%	1	3,100
New Proton	9%	4	2,6%	3	0,17	2	0%	3	-3%	4	3,5	1,01	3	0,81	3	3,0	29%	2	2,950
Attica Bank	19%	1	4,7%	4	0,15	2	0%	3	-1%	4	3,5	1,11	3	0,87	3	3,0	7%	1	2,450
Cyprus Popular Bank	12%	3	3,3%	3	0,11	2	0%	3	2%	3	3,0	1,02	3	0,90	3	3,0	19%	2	2,700
Bank of Cyprus	11%	3	1,6%	2	0,11	2	1%	2	12%	2	2,0	0,77	2	0,89	3	2,5	14%	1	2,200
Tbank	5%	5	4,4%	4	0,29	3	-2%	4	-113%	4	4,0	1,04	3	0,88	3	3,0	30%	2	3,600

CAMELS																			
Year 2011	C	0,2	A	0,2	M	0,2	E (ROA)		E (ROE)		0,1	L (L1)		L (L2)		0,2	S	0,1	Grade
Eurobank	13%	2	8,3%	5	0,05	1	-6%	4	-51550%	5	4,5	1,34	3	0,78	3	3,0	10%	1	2,750
National	13%	2	20,0%	5	0,09	1	-13%	5	-1140%	5	5,0	1,20	3	0,75	3	3,0	14%	1	2,800
Piraeus	-6%	5	8,5%	5	0,10	1	-13%	5	-312%	4	4,5	1,55	4	0,78	3	3,5	9%	1	3,450
Agricultural	NA	0	NA	0	NA	0	0%	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Alpha	10%	4	1,8%	2	0,11	2	-6%	4	-648%	4	4,0	1,52	4	0,80	3	3,5	10%	1	2,800
General	12%	3	10,4%	5	0,27	3	-20%	5	-401%	4	4,5	1,46	3	0,11	5	4,0	0%	1	3,550
Post bank	NA	0	NA	0	NA	0	0%	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Commercial	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
New Proton	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	0%	1	NA
Attica Bank	11%	3	8,5%	5	0,16	2	-6%	4	-100%	4	4,0	1,12	3	0,85	3	3,0	4%	1	3,100
Cyprus Popular Bank	14%	2	6,3%	5	0,10	1	-10%	4	-723%	5	4,5	1,22	3	0,75	3	3,0	15%	1	2,750
Bank of Cyprus	7%	5	2,6%	3	0,11	2	-4%	4	-59%	4	4,0	0,86	2	0,81	3	2,5	10%	1	3,000
Tbank	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA

CAMELS																			
Year 2012	C	0,2	A	0,2	M	0,2	E (ROA)		E (ROE)		0,1	L (L1)		L (L2)		0,2	S	0,1	Grade
Eurobank	14%	2	13,2 %	5	0,06	1	-2%	4	-105%	4	4,0	1,43	3	0,74	3	3,0	9%	1	2,700
National	12%	3	27,6 %	5	0,10	1	-4%	4	-77%	4	4,0	1,15	3	0,75	3	3,0	16%	2	3,000
Piraeus	11%	3	10,1 %	5	0,11	2	-2%	4	-29%	4	4,0	1,21	3	1,03	2	2,5	9%	1	3,000
Agricultural	NA	0	NA	0	NA	0	0%	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Alpha	9%	4	12,6 %	5	0,13	2	-2%	4	-281%	4	4,0	1,41	3	0,86	3	3,0	15%	1	3,300
General	19%	1	18,1 %	5	0,29	3	-3%	4	-24%	4	4,0	0,98	2	0,13	5	3,5	0%	1	3,000
Post bank	NA	0	NA	0	NA	0	0%	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Commercial	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
New Proton	-26%	5	19,7 %	5	0,16	2	-74%	5	-316%	4	4,5	0,52	2	0,86	3	2,5	8%	1	3,450
Attica Bank	5%	5	13,1 %	5	0,17	2	-4%	4	-197%	4	4,0	1,11	3	0,88	3	3,0	4%	1	3,500
Cyprus Popular Bank	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Bank of Cyprus	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA
Tbank	NA	0	NA	0	NA	0	NA	0	NA	0	NA	NA	0	NA	0	NA	NA	0	NA