

IMPACT FACTORS ON BANKING ACTIVITY'S PERFORMANCE IN CENTRAL AND EASTERN EUROPEAN COUNTRIES

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Abstract: *The paper has as premise the need to analyse the factors that impact on banking activity's performance in the context of some strong interdependencies between it and the overall socio-economic climate, given the essential role played by the banks in financing the economy and in the overall development of society. Starting from the scientific studies that have addressed the issue of bank profitability and hence the performance of banking activities there are identified different factors e.g. internal (bank size, capital adequacy, liquidity risk, expenses management, activity mix, credit risk etc.), industry specific (concentration, etc.) and macroeconomic (GDP growth, inflation, unemployment) but also the manifestation of financial crises that could have, rationally, major impacts on the results of banking activity, the latter being estimated through the most representative indicators ROA and ROE. The analysis is conducted on the scale and direction of the effects of factors that impact on banking performance by processing statistical data for 12 countries from Central and Eastern Europe over the period 2000-2011, using econometric methods such as Pearson correlation and Panel Least Squares. The empirical results for the group of countries which was analysed, reveals, first, a significant positive impact of the factors GDP growth and inflation on the performance of the banking business. It is noteworthy, yet, the fact that the internal factors expenses management and, especially, credit risk have the most profound negative impact on bank profitability. This leads us to consider necessary further efforts of the banks in the CEE countries to improve their expenses management by reducing the number of branches and by shifting towards selling banking products through alternative channels such as the Internet or Mobile Banking, respectively to reduce their credit risk, especially by preventing the deterioration of bank loan portfolio quality, but also by mitigation measures for the existing NPLs, aiming their recovery or, ultimately, by selling them and cleaning thus their balance sheets.*

Keywords: ROA; ROE; bank-specific factors; industry-specific factors; macroeconomic factors; crisis

JEL classification: C23; G21; M21

1. Introduction

The development and efficient operation of the banking system is one of the prerequisites for ensuring the necessary conditions of economic growth and sustainable development, both at country and regional level, especially where financing of economy cannot be achieved in a significant manner by the financial markets, as is the case in countries in Central and Eastern Europe.

In turn, the banking activity performance depends both on internal and external factors, among which is very important the economic and social climate. Thus, in our opinion, between banking and economy occur mutual influences, but they may also be affected by negative phenomena such financial and economic crisis.

In this framework, we consider that an analysis on the action factors impacting the banking business performance in CEE, during the early 21st century, marked by profound

changes in banking sector, but also by the the financial crisis, would allow drawing conclusions and outlining recommendations to improve banking.

2. Literature review

An overview of literature reveals significant concerns regarding the identification and analysis of causality between the performance of the banking system and economic development. Thus, several studies noted the major role of banks in the overall development of society (Demirgüç-Kunt & Huizinga, 1999; Sufian & Chong, 2008), including in supporting long term economic growth (Macit, 2012).

On the other hand, it should not be neglected also the reverse conditioning relationship, where the socio-economic framework influences banks' performance, both positively on the background of the balanced development of the economy and negatively, by transmitting the macroeconomic shocks, but also the existence of other factors that determine banking performance. Thus, we note that certain studies address the profitability of banking activity in certain groups of countries (Molyneux & Thornton, 1992; Staikouras & Wood, 2004; Athanasoglou et al., 2006; Flamini et al., 2009; Dietrich & Wanzenried, 2011), while others are focused on specific countries (Hoffmann, 2011; Athanasoglou et al., 2008; Sufian & Chong, 2008; Dietrich & Wanzenried, 2011; Rachdi, 2013; Trujillo-Ponce, 2013).

Also, recently, there is a growing interest in research into the effects transmitted on banking performance in the context of the recent global financial crisis (Dietrich & Wanzenried, 2011; Rachdi, 2013).

The evaluation of banks' activity performance is usually made by using indicators such as return on assets (Athanasoglou et al., 2006; Flamini et al., 2009; Dietrich & Wanzenried, 2011; Trujillo-Ponce, 2013) or return on equity (Athanasoglou et al., 2006; Dietrich & Wanzenried, 2011; Hoffmann, 2011; Trujillo-Ponce, 2013), which in our turn we consider that summarizes best the banking activity results.

Also, most of the papers on banking performance highlight that it is influenced by many factors, both internal (bank size, capital adequacy, liquidity risk, expenses management, activity mix, credit risk, etc.), external or industry-specific (e.g., concentration etc.) and macroeconomic (expressed by GDP growth, inflation etc.).

Thinking of the potential scale economies or diseconomies in the banking sector, bank size often appears in literature as a determinant of performance in banking activity. However, while some studies show a positive relationship between it and bank performance (Molyneux & Thornton, 1992; Bikker & Hu, 2002; Goddard et al., 2004), other studies found an inverse conditioning relationship between them (Staikouras & Wood, 2004; Athanasoglou et al., 2008; Sufian & Chong, 2008).

Another impact factor on banks performance, is capital adequacy. Literature reveals, however, different findings on the direction of its effects. Thus, some studies note a positive effect of the factor, arguing that a high level of capitalization implies a reduction of the cost of capital (Molyneux & Thornton, 1992; Goddard et al., 2004; Athanasoglou et al., 2006), with beneficial effects on profitability.

On the other hand, other works found negative effects of this factor, explained by a lower risk-taking by the banks (Sufian & Chong, 2008; Rachdi, 2013).

Expenses management or the efficiency of banks expenditures impacts also on the performance of banking activity. Thus a high cost to income ratio expresses an inefficient use of banks' resources and leads to an effect of reducing the banks' profitability (Pasiouras & Kosmidou, 2007; Dietrich & Wanzenried, 2011).

On the other hand, the performance of banking activity is influenced by the bank's ability to obtain significant income from other activities than lending. In this context, banks' activity diversification, which can be synthesized by the indicator non-interest income to total income, is a relevant factor with positive impact on banks' profit (Staikouras & Wood,

2004; Dietrich & Wanzenried, 2011).

Liquidity risk, as a result of the inability of banks to maintain a reasonable balance between assets and liabilities, usually materialized in the inability to convert the assets in money for covering their liabilities, may significantly affect the activity of banks and their performance. Thus, a high liquidity of assets has a positive impact on the profitability of banks (Athanasoglou et al., 2006; Sufian & Chong, 2008).

At the same time, credit risk, reflected in the increase of bad loans has effect both on failures in getting the expected revenues and on the increase of provision expenses, generating a major negative impact on the performance of banks (Macit, 2012; Trujillo-Ponce, 2013; Filip, 2014).

The most representative external factor specific to the banking industry addressed in literature is concentration, whose effect, however, appears to be ambiguous. Some studies (Molyneux & Thornton, 1992) have identified a positive relationship between concentration and banks' performance, banks with a higher market share resulting to have a significant profitability. However, we note that a number of other papers identified a negative relationship between concentration and profitability of banks (Demirgüç-Kunt & Huizinga, 1999; Staikouras & Wood, 2004).

The majority of authors also notes the existence of significant interdependencies between the banking performance and the general macroeconomic context. In this context, there are relevant the findings of several studies (Bikker & Hu, 2002; Sufian & Chong, 2008; Dietrich & Wanzenried, 2011) regarding the significant impact of economic growth on the profitability of the banking activity.

In the same framework, inflation can have, usually, a negative impact, by affecting the repayment capacity of borrowers and causing losses by delays or lack of loan repayments (Revell, 1979; Hoggarth et al., 1998; Staikouras & Wood, 2004). However, some studies (Molyneux & Thornton, 1992) found situations where results a positive relationship between inflation and banks performance, arguing that only the lack of anticipation of inflation causes negative effects.

On the other hand, we consider that also the unemployment rate variation may be a factor impacting performance of banking. Thus, an increase in unemployment makes some borrowers to lose their repayment capacity and also causes braking of economic development. These phenomena lead to bad loans of individuals and companies causing losses and reduce also banks' operating incomes.

3. Data and methodology

Our research starts with the selection of the impact factors on the banking performance and continues with analysing their effects, aiming to identify possible conclusions and actions required to improve the performance of banking systems.

In the analysis, we use annual data of banking systems from Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Poland, Romania, Slovak Republic and Slovenia, taken from international databases Global Financial Development Databank (GFDD) of World Bank, World Bank Databank and Financial Soundness Indicators (FSI) of the IMF, during 1999-2011.

The performance of the banking activity in the above mentioned states from CEE, will be assessed through the ROA and ROE indicators, considered as dependent variables in the econometric analysis we will perform.

We take into consideration three categories of impact factors on bank performance: a) internal (bank-specific) – bank size, capital adequacy, liquidity, expenses management, activity mix, credit risk; b) industry-specific – e.g. concentration; c) macroeconomic - GDP growth rate, inflation, unemployment. Thus, further analysis will consider for this impact factors and independent variables the indicators listed in Table 1, where we included their expected effect.

Table 1: Impact factors on banking activity performance –independent variables

Independent variable/ Determinant	Indicator	Abbreviation	Expected relationship (+/-)	Source
Internal determinants				
Bank size	Total Assets to GDP ratio	TA_GDP	+/-	World Bank GFDD database
Capital adequacy	Regulatory Capital to Risk Weighted Assets Ratio(%)	C_AS	+/-	IMF – GFSR-FSI Tables
Liquidity	Liquid assets to deposits and short term funding (%)	LqA_D	+	World Bank GFDD database
Expenses Management	Cost to Income Ratio (%)	C_I	-	World Bank GFDD database
Activity Mix	Non-interest income to total income (%)	NI_TI	-	World Bank GFDD database
Credit Risk	Non-performing loans to total loans ratio (%)	NPLR	-	World Bank GFDD database
Industry specific determinants (external)				
Concentration	Bank concentration	BKCONC	+/-	World Bank GFDD database
Macroeconomic determinants (external)				
Economic growth	GDP growth rate (%)	GDPGR	+	World Bank Databank
Inflation	Inflation rate - CPI (%)	INFLR	+/-	World Bank Databank
Unemployment	Unemployment rate variation (%)	ΔUNEM	-	World Bank Databank

In addition, we include in the analysis, an additional factor, as the dummy variable "crisis", in order to mark the impact of the crisis on banks' activity.

The development of the analysis, on the mentioned coordinates, concerns the processing of panel of data for the considered countries by using Pearson correlations, respectively, by building two econometric models, for each of the two dependent variables, and by testing them using the Panel Least Squares method.

4. Results and comments

A first part of the analysis implies using Pearson correlations in order to identify the linkages between ROA or ROE, and the considered factors, the results being shown in Table 2.

Table 2: Correlations and probabilities of ROA and ROE with the other variables

	ROA	ROE
TA_GDP	-0.197978**	-0.084399
	0.0263	0.3474
C_AS	0.050820	-0.225164**

	0.5720	0.0112
LQA_D	0.185550**	0.148869*
	0.0375	0.0962
NI_TI	-0.013885	0.221971**
	0.8744	0.0125
C_I	-0.321607***	-0.259026***
	0.0002	0.0034
NPLR	-0.341368***	-0.415560***
	0.0001	0.0000
BKCONC	-0.113586	-0.096610
	0.2054	0.2819
GDPGR	0.510268***	0.602261***
	0.0000	0.0000
INFLR	0.283526***	0.137450
	0.0013	0.1248
ΔUNEM	-0.384175***	-0.494690***
	0.0000	0.0000
CRISIS	-0.268325***	-0.410389***
	0.0024	0.0000

***, **, * - denotes significance at 1%, 5%, respectively 10% level

The data in Table 2 indicate that there are significant negative correlations between ROA and expenses management (coef. = -0.3216, Prob. = 0.0002), NPL rate (coef. = -0.3415, Prob. = 0.0001) and bank size (coef. = -0.1980, prob. = 0.0263), as internal variables, and with the external variable the unemployment rate variation (coef. = -0.3842, prob. = 0.0000), suggesting a negative impact on ROA from these variables, consistent with expected results. We, also, note the significant negative correlation (coef. = -0.2683, Prob. = 0.0000) between ROA and the dummy variable "crisis", that highlights the profound impact of the manifestation of financial crisis on ROA. On the other hand, there are shown significant positive correlations between ROA and assets liquidity (coef. = 0.1856, prob. = 0.0375) and, especially, with GDP growth rate (coef. = 0.5103, prob. = 0.0013) and inflation rate (coef. = 0.2835, prob. = 0.0024), while in relation to other factors the correlations appear to be insignificant.

According to the same table there result significant negative correlations between ROE, and expenses management (coef. = -0.2590, Prob. = 0.0034), NPL rate (coef. = -0.4156, Prob. = 0.0000) and capital adequacy ratio (coef. = -0.2252, prob. = 0.0112), as internal variables, and with the external variables the unemployment rate variation (coef. = -0.4947 prob. = 0.0000) and "crisis" (coef. = -0.4139, prob. = 0.0000). At the same time, there are highlighted significant positive correlation of ROE with assets liquidity (coef. = 0.1489, prob. = 0.0962), activity mix (coef. = 0.2220, prob. = 0.125) and the GDP growth rate (coef. = 0.6023, prob. = 0.0000). These facts express, as in ROA's case, the existence of reciprocal influences between banks profitability and the economic development in the countries of the analysed region, but also a positive impact of an increased liquidity and the diversification of banking activities on banks financial results. On the other hand, there

result no significant correlations of ROE with the other variables taken into consideration, during the analysed period.

Starting from the results obtained above, we consider that the analysis of the action of the factors with impact on the performance of banking activity in the countries of Central and Eastern Europe, which were analysed, can be achieved by building and testing of econometric regression models in which ROA, respectively ROE, are dependent variables.

In the next stage of the analysis of the factors we considered that may have impact on the evolution of ROA, is developed by building and using an econometric model whose regression equation is as follows (1):

$$y_{jt} = c + \beta_{1jt} X_{ijt} + \beta_{2jt} X_{cjt} + \beta_{3jt} X_{3jt} + \beta_{4jt} crisis + \varepsilon \quad (1)$$

where, j stands for the specific country, t stands for the year, y represents ROA, X_i represent the internal determinants, X_c represent the industry specific determinant, X_m represent the macroeconomic (external) determinants, β_i are the coefficients of the determinants, ε stands for the error term and crisis is the dummy variable for capturing the crisis manifestation.

We have tested further the above proposed model for estimating the impact of the mentioned factors on ROA, during 1999-2011, for the countries in Central and Eastern Europe, and we obtained the results presented in Table 3:

Table 3: Results of testing the proposed model for ROA

Dependent Variable: ROA				
Method: Panel Least Squares				
Sample (adjusted): 2000 2011				
Cross-sections included: 12				
Total panel observations: 126				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TA_GDP	-0.000882	0.003743	-0.235729	0.8141
C_AS	0.046088	0.016995	2.711892	0.0077
LQA_D	0.000199	0.006027	0.033012	0.9737
NI_TI	0.007206	0.007343	0.981297	0.3285
C_I	-0.022658	0.007223	-3.136919	0.0022
NPLR	-0.036100	0.011757	-3.070521	0.0027
BKCONC	-0.010512	0.004953	-2.122135	0.0360
GDPGR	0.072193	0.021284	3.391871	0.0010
INFLR	0.020440	0.010993	1.859320	0.0656
Δ UNEM	-0.051434	0.036008	-1.428408	0.1559
CRISIS	-0.152308	0.200063	-0.761299	0.4481
C	2.294403	0.742528	3.089987	0.0025
R-squared	0.495878	F-statistic		10.19416
Adjusted R-squared	0.447235	Prob(F-statistic)		0.000000

The data in Table 3 confirm a good degree of viability of the proposed model after testing it (R-squared = 0.4959, Adjusted R-squared = 0.4472), which expresses the fact that the dependent variable ROA is relevantly determined by the factors taken into consideration. We note the negative impact, statistically significant below the significance threshold of 1%, of the internal factors namely cost to income ratio (coef. = -0.0227), and NPL rate (coef. = -0.0361). It results also that expenses management and credit risk have insufficient levels in order to support an increase of the performance of the banks, and

thus they can be considered as the major internal factors acting as obstacles in the path of banking performance. In addition, there is a negative and significant impact, under the significance threshold of 5%, of the concentration of banks (coef. = -0.0105).

On the other hand, it results a statistically significant impact, below the significance threshold of 1%, of the variables capital adequacy ratio (coef. = 0.0461) and GDP growth (coef. = 0.0722), the latter expressing that a climate of economic development is likely to determine a positive trend of banks' profitability. In addition, we emphasize the positive impact, under the significance threshold of 10%, of inflation on the dependent variable.

For the second analysis on the performance of banking activities in CEE countries, taking ROE as dependent variable, we built the following equation (2)

$$z_{jt} = c + \beta_{1jt} X_{ijt} + \beta_{2jt} X_{cjt} + \beta_{3jt} X_{3jt} + \beta_{4jt} crisis + \varepsilon \quad (2)$$

, where z represents ROE, the other variables corresponding with those in previous model.

Testing the proposed regression equation on the data taken into consideration has led to the results in table 4.

Table 4: Results of testing the proposed model for ROE

Dependent Variable: ROE				
Method: Panel Least Squares				
Sample (adjusted): 2000 2011				
Cross-sections included: 12				
Total panel observations: 126				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TA_GDP	0.064142	0.033890	1.892668	0.0609
C_AS	-0.147774	0.153857	-0.960460	0.3389
LQA_D	0.108027	0.054564	1.979824	0.0501
NI_TI	0.252467	0.066477	3.797836	0.0002
C_I	-0.254476	0.065391	-3.891601	0.0002
NPLR	-0.237299	0.106437	-2.229475	0.0277
BKCONC	-0.048657	0.044845	-1.085009	0.2802
GDPGR	0.662823	0.192690	3.439848	0.0008
INFLR	0.177838	0.099525	1.786866	0.0766
ΔUNEM	-0.883436	0.325984	-2.710059	0.0078
CRISIS	-4.344365	1.811208	-2.398601	0.0181
C	16.61715	6.722243	2.471965	0.0149
R-squared	0.620768	F-statistic		16.96430
Adjusted R-squared	0.584175	Prob(F-statistic)		0.000000

The test results for the proposed econometric model highlights its high reliability (R-squared = 0.6208, Adjusted R-squared = 0.5842), which states that the evolution of ROE for the banking systems in the analysed region is substantially determined by the considered independent variables.

The data in the table confirm the important negative impact of the variables expenses management (coef. = -0.2545, Prob. = 0.0002), NPL rate (coef. = -0.2373, Prob. = 0.0277), the unemployment rate variation (coef. = -0.8834, prob. = 0.0078) and, especially, of the crisis (coef. = -4.3444, prob. = 0.0181) on the dependent variable. Thus, we find a negative impact on the banking activity performance determined both by the manifestation of the financial and economic crisis, the poor expenses and credit risk management, but also by the phenomenon of unemployment, which affects strongly the

repayment capacity of borrowers.

On the other hand, we find significant positive impact on ROE generated by the variables bank size (coef. = 0.0641., Prob. = 0.0609), liquid assets to deposits and short term funding (coef. = 0.1080, prob. = 0.0501) and the diversification of the activity (coef. = 0.2525, prob. = 0.0002). As in ROA's case, GDP growth has also a significant positive impact (coef. = 0.6628, prob. = 0.0008), which reinforces the idea that the overall development of the economy supports the increase of the performance of banking systems. Similarly, we find the same positive effect (coef. = 0.1778, prob. = 0.0766) of inflation on ROE.

5. Conclusions

Our research aims to identify and analyse factors impacting on the performance of the banking activity, which we have evaluated by using the most relevant indicators for it, namely ROA and ROE.

In this context we note that in addition to internal factors (e.g. bank size, capital adequacy, liquidity risk, expenses management, activity mix, credit risk, etc.), the performance of banks is also determined by industry-specific factors (concentration, etc.) and external factors such as macroeconomic ones (GDP growth, inflation, unemployment), including significant negative phenomena such as economic and financial crises.

It is highlighted thus the existence of close interdependence between banking systems performance and the overall socio-economic climate, meaning, on the one hand, that efficient functioning of banking systems creates conditions for economic growth and supports sustainable development and, on the other hand, the performance of banking activities depend substantially on the socio-economic development at local and regional level.

In the analysis of bank performance and of its determinants, we used data on 12 CEE countries, for the period 1999-2011, and we processed them by econometric methods. The analysis of ROA and ROE correlations with the other variables, highlighted for both of them significant negative correlations with expenses management, credit risk, unemployment and crisis manifestation, and significant positive correlations with GDP growth and assets liquidity.

The analysis on the performance of banking activity was deepened by building and testing of regression equations, where ROA and ROE were dependent variables while the internal and external determinants are considered as independent variables. The results showed significant positive impacts of GDP growth and inflation and profoundly negative impacts of credit risk and expenses management on both of the dependent variables and hence on the performance of banks. However, both unemployment and crisis resulted to negatively impact on banks' profitability, but significantly only in ROE's case. The concentration appears to have negative effect on the performance of banks significantly only on ROA, while the assets liquidity has a positive impact, but significant only on ROE.

Looking at the results, we conclude first that in the analysed region is confirmed, overall, a strong interrelationship between the performance of the banking systems and the socio-economic environment, especially with economic growth. Also, we consider that additional efforts are needed to improve the banks' expenses management by reducing the number of branches and shifting towards selling banking products through alternative channels such as the Internet or Mobile Banking, respectively to reduce their credit risk, especially by preventing the deterioration of bank loan portfolio quality, but also by mitigation measures for the existing NPLs, aiming their recovery or, ultimately, by selling them and cleaning thus their balance sheets.

References

- Athanasoglou, P., Delis, M. and Staikouras, C. (2006) "Determinants of Bank Profitability in the Southern Eastern European Region", *Bank of Greece Working Paper No. 47*
- Athanasoglou, P., Brissimis, S., N. and Delis, M. (2008) "Bank-specific, industry-specific and macroeconomic determinants of bank profitability", *Journal of International Financial Markets, Institutions and Money* 18, pp. 121-136
- Bikker, J. and Hu, H. (2002) "Cyclical patterns in profits, provisioning and lending of banks and procyclicality of the new Basel capital requirements", *BNL Quarterly Review* 221
- Demirgüç-Kunt, A. and Huizinga, H. (1999) "Determinants of commercial bank interest margins and profitability: Some international evidence", *World Bank Economic Review* 13 (2), pp. 379-408
- Dietrich, A. and Wanzenried, G. (2011) "Determinants of bank profitability before and during the crisis: Evidence from Switzerland", *Journal of International Financial Markets, Institutions and Money* 21 (3), pp. 307-327
- Filip, B.F. (2015) "Implications on the Profitability of Banking Activity in the Context of the Current Global Financial Crisis". *The Journal of Accounting and Management*, 4(3), pp. 21-25
- Flamini, V., McDonald, C. and Schumacher, L. (2009) "The determinants of commercial bank profitability in Sub-Saharan Africa", *IMF Working Paper*, No 09/15, pp. 1-30
- Goddard, J., Molyneux, P. and Wilson, J. (2004) "The profitability of European banks: A cross-sectional and dynamic panel analysis". *Manchester School*, 72(3), pp. 363-381
- Hoffman, P.S. (2011) "Determinants of the Profitability of the US Banking Industry", *International Journal of Business and Social Science*, Vol.2, No.22, pp. 255-269
- Hoggarth, G., Milne, A. and Wood, G., (1998) "Financial innovation and financial stability: some lessons from Germany and the UK". *Financial Stability Review*, Bank of England
- Macit, F. (2012) "Bank Specific and Macroeconomic Determinants of Profitability: Evidence from Participation Banks in Turkey", *Economics Bulletin*, Vol.32, No.1, pp. 586-595
- Molyneux, P. and Thornton, J. (1992) "Determinants of European bank profitability: A note". *Journal of Banking and Finance* 16 (6), pp. 1173-1178
- Pasiouras, F. and Kosmidou, K. (2007) "Factors influencing the profitability of domestic and foreign commercial banks in the European Union", *Research in International Business and Finance*, 21(2), pp. 222-237
- Rachdi, H., (2013) "What Determines the Profitability of Banks During and Before the International Financial Crisis? Evidence from Tunisia", *International Journal of Economics Finance and Management*, vol.2, no.4, pp. 330-337
- Revell, J. (1979) *Inflation and Financial Institutions*, London: *The Financial Times*
- Staikouras, C. and Wood, C. (2004) "The Determinants of European Bank Profitability", *International Business & Economics Research Journal*, Vol.3, No.6, pp. 57-68
- Sufian, F. and Chong, R. R., (2008) "Determinants of Bank Profitability in a Developing Economy: Empirical Evidence from the Philippines", *Asian Academy of Management Journal of Accounting and Finance*, Vol.4, No.2, pp. 91-112
- Trujillo-Ponce, A., (2013) "What Determines the Profitability of Banks? Evidence from Spain", *Accounting and Finance*, vol. 53, no. 2, pp. 561–586