Does the Disclosure of Performance Indicators Impact Bank Profitability? Empirical Study for the Romanian Banking System

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Abstract

New banking regulations and the increasing attention of banks in publicly disclosing information through their websites have led in recent years to an intensification of Corporate Social Responsibility CSR disclosures based on diverse and the same time in-depth categories of information regarding not only the classic financial and accounting information, but also corporate governance, environment and social involvement in community disclosures. Content analysis was used to study the annual reports published on Romanian banks' websites between 2013 and 2020, in order to find financial indicators disclosures, especially those related to banking performance. The relationship between bank profitability (measured by ROE and ROA), bank characteristics (set by size of the banks) and the disclosure degree was examined through OLS (Ordinary Least Square) regression panel model, using STATA. The results suggest that the evolution of performance banking indicators is influenced by the size of the banks and the disclosure degree.

Key words: disclosure, banks, profitability, Romania
J.E.L. classification: C23, G21, L25

1. Introduction

The inability of the literature to provide an unanimously acceptance of CSR (Corporate Social Responsibility) is obvious and fully justified, if taken into account the dynamics of CSR, given both the voluntary reporting, at the discretion of the banks, but also the reporting imposed by specific regulations. According to several authors (Jain et al., 2015, p.14), CSR reporting in banks and its assessment is by no means an exact science, if consider that CSR reporting is an organic process, one that is continually evolving. The construction of CSR studies is under the sign of the three fundamental theories – the legitimacy theory, agency theory and stakeholder theory. Many of the existing organizations began to change their way to doing business by adopting CSR practices (Modreanu et al., 2021, p.366). Precise boundaries between Corporate Social Responsibility, Corporate Governance or Accountability are difficult to outline, given the interactions between them, by also by the permanent evolution of concepts. Even if in recent years the focus of CSR is directed towards social and environmental responsibility aspects, still the subject of bank profitability remains a fundamental one of CSR policies. Various categories of bank stakeholders are interested in aspects of bank profitability, so in this field, we identify on the one hand, specific banking settlements in the area of financial reporting, in which various profitability indicators are disclosed, and on the other hand, each bank has the freedom to present details of profitability in various annual reports or similar documents.

We intend to find out how the performance banking indicators is influenced by the size of the banks and the disclosure degree. Study case was developed for the Romanian banking system. The paper is structured as such: the first section reviews the specialized literature, and the following sections present the research methodology and the study design, followed by results and conclusions.

2. Literature review

The investigation between CSR and bank profitability brought in the specialized studies various results, either the validation of some hypotheses of connection of the variables (positive or negative), or showed that there is no interdependence between CSR and bank profitability. A study conducted in 1985 (Aupperle et al., 1985, p.462) that have examined the empirical relationship between CSR and profitability, show us four components of assessing CSR – economic, legal, ethical and discretionary. These four components are divided into two categories – "a concern for society", consistent of legal, ethical and discretionary and "concern for economic performance", that contains economic component. When correlating orientation toward social responsibility, "a concern for society" with profitability, the authors observed no statistically significant relationship. Attempts to configure CSR disclosure indices are not only recent, but the topic has concerned the research community in economics, especially in the 2000s, in the context of preparing specific measurement indicators. A CSR index was developed by Branco and Rodrigues (Branco and Rodrigues, 2008, p.694) - a SRD (Social Responsibility Disclosure) disclosure index which contains 30 indicators, grouped into 5 areas: environmental disclosure, human resource disclosure products and customers disclosure and community involvement disclosure. For the banking industry, the mentioned index was used in the analysis CSR disclosure on Tunisian listed banks – 11 banks during the period from 2007 to 2012 (Chakroun et al., 2017, pp.552). Content analysis represents a technique used by the mentioned authors to identify CSR items in the annual reports on websites, to which is added a multivariate analysis which proves that the level of CSR disclosure in Tunisian listed banks' annual report is explained by the leverage and financial performance variables (ROE). Recent study proves that bank profitability is not (only partially) significant in explaining CSR (Corporate Social Responsibility) website disclosures, based on a sample of 78 banks from the German banking industry (Schroeder, 2021, p.768). Particularities of banking activities, such as mobile banking, have been captured in specialized studies, based on CSR disclosure practices in line with Global Reporting Initiative (GRI). An index of 14 items used to measure the level of disclosure (about mobile banking) was developed by De Oliveira Malaquias and Hwang (De Oliveira Malaquias and Hwang, 2018, p.622) for Brazilian banks between 2006 and 2017. A negative interactive relationship between CSR (measured as "obra social" – "social work", a CSR practice that incurs a cost for Saving Banks in Spain) and financial performance (measured as ROA Return on Assets and ROE Return on Equity) have been proved for 47 entities between 1996 and 2006 (Martínez-Campillo et al., 2013, p. 54). An insignificant relationship between online financial disclosure with profitability (ROE and ROA), leverage and age by the Islamic banks in the Gulf Cooperation Council countries during 2015-2017 has been proved (Al-Sartawi and Reyad, 2018, p.237).

Recent approach was developed the CSR index of banks by using the method of principal component analysis, about which the authors consider could eliminate the subjectivism of other types of approaches (Zhou et al., 2021, p.10). The CSR index has been built from 10 different indicators based on the following areas: Growth ability (Growth rate of total assets, Growth rate of net assets, Growth rate of operating revenue, Operating profit growth rate), Profitability (Return on total assets, Return on equity), Quality of earnings (Earnings per share - diluted), and Risk management (Liquidity ratio, Nonperforming asset ratio, Core capital adequacy ratio).

Regarding the situation in Romania, the impact of corporate governance on the financial performances of the banks has been studied for 23 commercial banks in Romania during 2013-2015 (Manta et al., 2018, p.165). They proved that the size of the board (represented by the supervisory board and the executive board) determined a positive and significant impact on the

performance. Romanian listed banks on the Bucharest Stock Exchange have been studied in 2015 in terms of relationship between corporate governance disclosure issues and the financial performance (ROE Return on Equity, ROA Return on Assets and PER Price Earnings Ratio) (Perpelea and Mihalcea, 2019, p.536). The authors found that the positive relationship the studied variables. Another authors showed that the level of application of the CSR (7 areas and 18 criteria) is not significantly related to the financial performance of the banks (Paulik et al., 2015, p.65). Their results are based on four banks in the Czech Republic from 2010 to 2013. Another country studied from Eastern and Central Europe is Poland. Several authors have examined 18 commercial banks from Poland between 2008 and 2015, through the content analysis, and they found a positive relationship between banks' CSR disclosures and their profitability measured by ROA and ROE, while the relationship between banks' CSR disclosures and NIM Net Interest Margin is negative (Matuszak and Różańska, 2017, p.522).

3. Research methodology

Our study presents an empirical analysis of the correlation between bank profitability and the disclosure of performance in the annual reports published on the websites of Romanian banks. The empirical data required for this part of the study were collected using the content analysis method. In the necessary information collection phase, we applied mediated data collection methods, using information from the annual financial statements and annual reports published on the official websites of each entity in the sample analyzed for the period 2013-2020. Other data used were obtained by calculations working with statistical-mathematical methods, using Microsoft Excel software.

For the sampling, the entities were selected based on inclusion and exclusion criteria, namely:

- Inclusion criteria: Romanian banks were included, which in 2020 had published at least one of the financial indicators ROE Return on Equity, ROA Return on Assets and CIR Cost-to-Income Ratio;
- Exclusion criteria: those banks that had published scanned financial statements and do not allow advanced search were not selected; economic entities that did not comply throughout the analysis of the continuity principle.

In this way, we obtained a sample consisting of 10 banks, for a period of 8 years, a total of 80 observations (Banca Comercială Română SA, Banca de Export Import a României (EXIMBANK) SA, Banca Românească SA, Banca Transilvania SA, BRD - Groupe Societe Generale SA, Idea Bank SA, Libra Internet Bank SA, Patria Bank SA, Raiffeisen Bank SA, Unicredit Bank SA).

Following the collection of relevant data necessary for empirical research, we moved on to the next phase, that of data analysis. If the part of obtaining and calculating the data was done using the Microsoft Excel software, the part of analysis and further processing of the multiple linear regression model was done using the STATA software. Initially, in our model we tried to include several variables, both internal and macroeconomic, but some of them are not stationary, and could not be stationary, therefore they were excluded from our model.

The dependent variables in our models are variables that describe bank profitability, namely financial profitability – Return on Equity (ROE) and Return on Assets (ROA):

- ROE or financial profitability measures the profitability of the economic entity's activity in generating profits, per unit of equity. For Romanian banks in our sample for the period 2013-2020, ROE varies between -89.79% and 45.21% with a standard deviation of 20.995% and an average of 3.814%.
- ROA measures the return on an entity's assets in the generation of future economic gains or benefits. For Romanian banks in our sample for the period 2013-2020, ROA varies between -8.07% and 5.63% with a standard deviation of 1.979% and an average of 0.528%.

The regressors of the model, the explanatory variables used in our analysis are:

- The bank size expressed by natural logarithm of Total Assets for Romanian banks, in our sample for the period 2013-2020, varies between 0 and 18,454 with a standard deviation of 2,928 and an average of 15,987. We estimate that the size of the entity would have a positive impact on ROE and ROA.

- The disclosure degree expressed by the number of performance indicators identified in the annual reports, it is a variable calculated by us. The following indicators were sought in the banks' annual reports: ROA, ROE, Income Cost Ratio, Immediate Liquidity and Solvency Indicator. We attributed a number of identified indicators represents the disclosure degree (0 for no indicator, 1 for one indicator, 2 for two indicator and so on up to 5 for five indicators that have been identified as disclosed in the annual reports of banks). We have chosen the indicators listed above because they are the most common indicators in the banks' annual reports, as it resulted from the content analysis of the reports we did. For Romanian banks in our sample for the period 2013-2020, the disclosure degree varies between 0 and 5 with a standard deviation of 1,783 and an average of 2,688. For stationary, the disclosure degree was logarithmic and as a result the number of observations was reduced to 60. We estimate that the disclosure degree will have a positive impact on ROE and ROA.

Table no. 1 Descriptive statistics for ROE model

Variable	Obs	Mean	Std. Dev.	Min	Max
ROE	80	3.814	20.995	-89.79	45.21
Bank size	80	15.987	2.928	0	18.454
Disclosure degree	80	2.688	1.783	0	5
Ln Disclosure degree	60	1.226	.347	0	1.609

Source: Authors' calculations

Table no. 2 Descriptive statistics for ROA model

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	80	.528	1.979	-8.07	5.63
Bank size	80	15.987	2.928	0	18.454
Disclosure degree	80	2.688	1.783	0	5
Ln_Disclosure degree	60	1.226	.347	0	1.609

Source: Authors' calculations

We studied the correlation between bank profitability expressed by the financial profitability, assets profitability, the disclosure degree of profitability indicators and the bank size using the multiple linear regression models presented below.

ROE model

$$ROE = \beta_0 + \beta_1 \times ln\_Total\_Assets_{i,t} + \beta_2 \times ln\_disclosure\_degree_{i,t} + \varepsilon_{i,t}$$

(1)

ROA model

$$ROA = \beta_0 + \beta_1 \times ln\_Total\_Assets_{i,t} + \beta_2 \times ln\_disclosure\_degree_{i,t} + \varepsilon_{i,t}$$

(2)

where, $ln\_Total\_Assets_{i,t}$ denotes natural logharitm of total assets and $ln\_disclosure\_degree_{i,t}$ represents the natural logarithm of disclosure degree, $\varepsilon_{ij,t}$ is an *iid* error term specific to country i in year t. We have performed the regression based on sample of 10 banks and 8 years included into the model and we have examined the results. In the ROE model, the sample is comprised of 60 observations and the expanatory index of the model, which consists in the R-squared, is at the medium level of 27,4%.The independent variables explains 27,4% of the variation of ROE on our sample.

Table no. 3 Empirical results for ROE model

Linear regression

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bank size	6.598	1.762	3.74	0	3.07	10.126	***
Ln_Disclosure degree	11.761	6.974	1.69	.097	-2.204	25.726	*
Constant	-118.257	30.109	-3.93	0	-178.548	-57.965	***
Mean dependent var		7.415	SD dependent var				16.634
R-squared		0.274	Number of obs				60.000
F-test		9.773	Prob > F				0.000
Akaike crit. (AIC)		493.393	Bayesian crit. (BIC)				499.676
*** p<.01, ** p<.05, * p<.1							

Source: Authors' calculations

Table no. 4 Empirical results for ROA model

Linear regression

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Bank size	.758	.217	3.50	.001	.324	1.191	***
Ln_Disclosure degree	1.285	.656	1.96	.055	-.028	2.599	*
Constant	-13.545	3.907	-3.47	.001	-21.37	-5.721	***
Mean dependent var		0.808	SD dependent var				1.948
R-squared		0.259	Number of obs				60.000
F-test		7.702	Prob > F				0.001
Akaike crit. (AIC)		237.264	Bayesian crit. (BIC)				243.547
*** p<.01, ** p<.05, * p<.1							

Source: Authors' calculations

The OLS models obtained for ROE and ROA confirm that the entity size as well as the disclosure degree of information positively and significantly influence the return on equity and return on assets. The model obtained explains the return on equity in proportion of 27.4%, and the return on assets in proportion of 25.9%.

In the Tables no. 5 and 6 the correlation matrix for the variables is being presented. There are no correlations bigger than 0.5 between regressors and all used variables and this means that our independent variables are not correlated.

Table no. 5 Correlation matrix ROE model

Variables	ROE	Bank size	Ln_Disclosure degree
ROE	1.000		
Bank size	0.463	1.000	
Ln_Disclosure degree	0.222	-0.050	1.000

Source: Authors' calculations

Table no. 6 Correlation matrix ROA model

Variables	ROA	Bank size	Ln_Disclosure degree
ROA	1.000		
Bank size	0.455	1.000	
Ln_Disclosure degree	0.206	-0.050	1.000

Source: Authors' calculations

One important step in the methodology of this study was to check the stationarity of the variables in the Panel Regression Model with Fisher Test. The estimates are run through OLS panel data method with robust standard errors, consistent with panel-specific autocorrelation and heteroskedasticity (Socol and Sinițîn, 2021, p.829). All variables used in our analysis are stationary.

Table no. 7 Fisher-ADF unit root tests

Fisher-ADF(1 lag)				
	Inv. chi-squared	Inv.N	Inv.L	M.Inv chi-squared
ROE	74.3455 [0.0000]	-5.7752 [0.0000]	-6.3926 [0.0000]	8.5928 [0.0000]
ROA	71.8886 [0.0000]	-5.5848 [0.0000]	-6.1539 [0.0000]	8.2043 [0.0000]
Bank size	179.8087 [0.0000]	-11.4807 [0.0000]	-15.8233 [0.0000]	25.2680 [0.0000]
Ln_Disclosure degree	50.7400 [0.0000]	-5.1558 [0.0000]	-5.7388 [0.0000]	7.9078 [0.0000]

Source: Authors' calculations

4. Results

All dependent variables in our models have a significant impact on ROE and ROA: for bank size p value is below 1% and for natural logarithm of disclosure degree P value is below 10 %. Bank size has a positive impact on Return on Equity and also on Return on Assets, and this means that an increase of bank size with one unit leads to a increase by 6,598 of Return on Equity and by 0,758 on Return on Assets. The model also presents a direct proportionality between disclosure degree and bank profitability, expressed by ROE and ROA. Banks with higher performance disclosure degree have performed higher profitability indicators expressed by Return on Equity and Return on Assets.

Table no. 8 Determinants of ROE and ROA

VARIABLES	(1) ROE	(2) ROA
Bank size	6.598*** (1.762)	0.758*** (0.217)
Ln_Disclosure degree	11.76* (6.974)	1.285* (0.656)
Constant	-118.3*** (30.11)	-13.55*** (3.907)
Observations	**60**	**60**
R-squared	**0.274**	**0.259**

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: Authors' calculations

The estimation results suggest that ROE and ROA is influenced not only by factors which were analyzed in these models and there are other variables that explain the variation of the dependent variables.

5. Conclusions

The interest, both in the banking field and in the academic one, growing for the CSR Corporate Social Responsibility aspects and their relation with the profitability disclosed by the banks through their websites, made us develop the present study. It is built on an empirical study at the level of a sample of 10 banks from Romania, about which information could be collected from the annual reports (2013-2020), regarding the bank profitability and the disclosure of performance. Inclusion criteria were that Romanian banks to have published in 2020 at least one of the financial indicators ROE Return on Equity, ROA Return on Assets and CIR Cost-to-Income Ratio. Exclusion criteria

refer to those banks that had published scanned financial statements and do not allow advanced search were not selected and economic entities that did not comply throughout the analysis of the continuity principle.

We developed an OLS (Ordinary Least Square) regression panel model, using STATA in order to prove the relationship between bank profitability (measured by ROE and ROA), bank characteristics (set by size of the banks) and the disclosure degree (a variable that we computed based on the following indicators were sought in the banks' annual reports: ROA, ROE, Income Cost Ratio, Immediate Liquidity and Solvency Indicator). The results suggest that the evolution of performance banking indicators is influenced by the size of the banks and the disclosure degree.

The limitations of the study based on only national approach and a small number of banks in the sample make the results not generalized. Also, of the many forms of quantifying banking performance, only ROA and ROE were chosen and no more extensive approach was developed, taking into account for example, other banking performance indicators, such as business turnover, net profit rate etc. Also, the characteristics of the banks were approached only in terms of their size, without taking into account other aspects.

6. Acknowledgements

7. References

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