CORPORATE SOCIAL RESPONSIBILITY AND BANK PERFORMANCE IN TRANSITION COUNTRIES

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Abstract

This paper studies the relationship between corporate social responsibility and bank performance for 16 transition countries of the former Soviet Union and Central and Eastern Europe. The aim is to investigate (1) the nature of the link between corporate social responsibility and bank performance and the motive of banks to engage in corporate social responsibility (2) whether this is different during stable (2002-2005) and turbulent (2008-2012) periods. The results of the structural equation model using the data for 254 banks show that corporate social responsibility positively impacts on bank performance in both periods and implies that the strategic choice is the main motive of the banks to engage in corporate social responsibility for the countries investigated in the paper.

Keywords: Bank, Corporate Social Responsibility, Transition Economies, Performance, Technical Efficiency

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1 Introduction

Over the recent decades corporate social responsibility (CSR) and its relationship with corporate performance became an interesting yet still continuing debate among researchers. According to Wu and Shen (2013) companies are mostly encouraged to adopt CSR thanks to its benefits to micro and macro performances, where the first is generally related to the reputation of companies, retaining and recruiting highly qualified workers, while the second means environmental improvement and reduction in social inequality. Deng et al. (2013) investigate CSR and stakeholder value maximization and find that mergers by high CSR acquirers take less time to complete and are less likely to fail compared to low CSR acquirers suggesting that the acquirers' social performance is a crucial element of merger performance.

There is no single universally adopted definition of CSR, however, all existing definitions share in common the belief that firms are responsible for public goods (Blowfield and Murray, 2008). Particularly, CSR addresses the activities corporate executives take to balance the interests of all stakeholders, namely, shareholders, employees, customers, suppliers as well as the community and the society in which they operate (Thompson et al., 2013). While achieving their corporate goal businesses use the resources of the society they operate in and thus have an impact on changes in their environment.

In this paper we focus on CSR activities of the banking sector, which plays a significant role in economic development (e.g. Levine, 2005, Djalilov and Piesse, 2011). Banks, as financial intermediaries, significantly impact on society while implementing their primary functions such as pricing and valuing financial assets, monitoring borrowers and managing financial risks (Scholtens, 2009). Since the majority of bank assets come from depositors (i.e. society), not from shareholders, banks are required to provide feedback to the community more often compared to other industries (We and Shen, 2013).

The economic literature discovered two main approaches of the CSR definition study:
1) CSR as philanthropy. Social initiatives are identified as actions of funds transfer in favor of individual or non-governmental organization, and act as one of the means of optimizing the tax burden.
2) CSR can be identified as a business or marketing strategy. In the first case, CSR is characterized as a business strategy that involves the impact of CSR on the effectiveness and efficiency of the banking business.

Husted and Salazar (2006) compare the cases of altruism (philanthropy), coerced egoism and strategy examining the situation where firms have profit maximization and social performance. Their analyses show that it is wiser for the firms to behave strategically than to be coerced into investing in CSR. Positive correlation between CSR and bank performance indicators (return on asset (ROA), return on equity (ROE), return on sales, market share) was obtained by McGuire et al. (1988), McWilliams and Siegel (2000), Roman et al. (1999), Mohammad (2012), Orlitzky, Schmidt and Rynes (2003) and others.

However, such scientists as Aupperle et al. (1985), Moskowitz (1972) substantiated the negative correlation of CSR and financial performance. The negative cohesion was intrinsic for such indicators as share prices and dividends. In the research of Alexander and Buchholz (1978) the negative correlation between CSR and financial performance is explained by the fact that these indicators are random variables.

Moreover, the level of engagement of banks in social activities varies across countries and this may come from different perceptions of their impact on banks' performance. Therefore, the existing studies (e.g. Soana, 2011; Wu and Shen, 2013) produce various results on the link between CSR and bank performance so we believe that the nature of the link between CSR and firm performance depends on methods and data used in analyses as well as on the motives of banks engaged in social activities. In general we support the view that businesses should help to solve social problems whether or not firms created them.

Additionally, CSR, as a component of societal marketing, may increase stakeholder loyalty and improve the image of banks, which may ultimately affect their performance. Moreover, due to the sustainable growth over the last decades the role of banks and their importance have significantly improved.

Thus, the aim of this paper is to investigate (1) the nature of the link between corporate social responsibility and bank performance and the motive of banks to engage in corporate social responsibility (2) whether this is different during stable (2002-2005) and turbulent (2008-2012) periods.

This study is interesting because of two reasons. Firstly, many studies address the CSR in banking sectors but most focus on developed and developing countries (e.g. Soana, 2011; Wu and Shen, 2013; Simpson and Kohers, 2002). However, banks behave differently under different institutional settings (Berger et al., 2001; Berger and Udell, 2002; Haselmann and Wachtel, 2007) which implies that the results obtained for developed and developing countries may not apply to the transition ones. Secondly, banks are different in nature from other types of companies. Traditionally, banking research has taken one of two approaches. The first is that a bank undertakes financial intermediation between lenders with funds and borrowers who require funds for investment purposes (the intermediation approach) while the second considers the bank as a productive firm, which produces financial services using labor and capital (the production approach). In this paper we consider banks as financial intermediaries.

As traditional banking products and services are very similar worldwide, CSR, as a signal for product-service quality signal, may play important role to attract customers. Servaes and Tamayo (2013, p. 1048) states «Consumers realize that only firms that care about product quality are willing to invest in CSR activities because profit-oriented firms find these investments "too expensive."».

The contribution of this paper is threefold. Firstly, this is the first paper to focus on the link between CSR and bank performance for transition economies of the former Soviet Union and Central and Eastern Europe using panel data. Secondly, the relevant literature distinguishing the link between CSR and bank performance over stable and turbulent periods is limited. So, we analyze the link over stable (2002-2005) and turbulent (2008-2012) periods (Demirguc-Kunt, 1998) respectively using the data for 254 banks. Thirdly, the existing studies do not include bank specific variables such as concentration ratio, risk as well as technical efficiencies in the same model while investigating CSR and bank performance. For example, Wu and Shen (2013) consider concentration ratio (Herfindahl-Hirschman Index (HHI)) and Keffas and Olulu-Briggs (2011) use technical efficiency in their models to analyze corporate social responsibility. However, we believe that banking concentration (or level of competition), risk taking behavior as well as technical efficiency impact on banks' engagement in CSR and thus affect their performance.

Banks in transition countries started to engage in corporate social activities comparatively recently so it is interesting to investigate the impact of CSR on bank performance and whether CSR is aligned to bank strategies. Therefore, as a pioneering investigation this paper generates new evidence. Our data include 13 countries of former Soviet Union, namely, Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Tajikistan, Ukraine and Uzbekistan as well as 3 countries of Central and Eastern Europe (CEE) such as the Czech Republic, Hungary and Poland.

The structure of the paper is as follows: Section II reviews the existing literature, Section III describes the data and the methodology, Section IV discusses the results and Section V concludes.

2 Brief discussions on the relevant literature

2.1 Why Transition Economies

Over the last 25 years, a plethora of studies have focused on the transition of countries from CEE from a system of central planning to a market economy. The majority of socialist countries, especially the former Soviet Union have specific features of economic development associated with the rule of the Communist regime as for more than 70 years in which the state's role was crucial, with authoritarian governance, centrally planned economy, the transition to a market economy in late 1980 – early 1990 and, consequently, the rapid development of economies

and their integration into the world economy. Also this resulted in the lack of a national collective memory of any other form of economic organization or institutions in these countries and no experience of managing a domestic market economy prior to the collapse of the Soviet Union in 1991.

There is a significant difference between the countries of the early (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland) and late (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Tajikistan, Ukraine, Uzbekistan) transition countries. Particularly, faster price liberalization, market reforms and macroeconomic stabilization provide a sharp contrast between early and late transition countries, where the first only had a system of central planning for the period following the Second World War until the 1990s. Moreover, some USSR former countries, especially those located in Central Asia, are geographically extensive and political instability from neighbors such as Afghanistan can be contagious and therefore ensuring economic growth and financial stability is vital to retain social cohesion and sustained development.

Even though the countries of the former Soviet Union and those of Central and Eastern Europe have been utilizing different approaches to a market economy, the first have grown significantly over the last decade converging CEE countries. Additionally, to consider cross bank and cross country differences we employ bank specific and macro variables in our models.

2.2 Recent studies on the link between CSR and firm performance

Over the last decades the role of CSR is growing (Bihari and Pradhan, 2011) and scholars explore its effect on various dimensions of firms. However, the existing studies have various conclusions. For example, McGuire et al. (1988), Roman et al. (1999) and Mohammad (2012) find positive correlation between CSR and financial performance variables (e.g. ROA, ROE, return on sales). Similarly, the results of the studies by Waddock and Samuel (1997), Cochran and Wood (1984) confirm the existence of positive correlation between CSR and bank performance. Moreover, the meta analysis by Orlitzky et al. (2003) based on 52 quantitative studies with a total sample of 33,878 observations conclude that financial successes of companies depend on companies' ability to adequately formulate corporate strategy development and maintain its full and timely implementation simultaneously addressing stakeholders interests.

Using non-parametric analysis of technical efficiency (Data Envelopment Analysis (DEA)) Keffas and Olulu-Briggs (2011) discover a correlation between the CSR and the financial performance of banks in the USA, the UK and Japan. In their study banks are divided into two groups, where the first are those that declare the presence of corporate social responsibility, while the second are those where CSR is absent. Their results confirm the existence of a positive relationship between CSR and financial performance, i.e. the banks with CSR in place have better asset quality and are more efficient in managing their asset portfolios and capital.

The scholars investigate the relationship between CSR and financial performance via such dimensions as employee attraction motivation and retention (Waddock et al, 2002; Turban and Greening, 2000), customer attraction and loyalty (Williams, 2005; Dawkins and Lewis, 2003), business reputation (Lancaster, 2004; Whooley, 2004) and easier access to capital (Roberts et al, 2002; Waddock and Graves, 1997). Sweeney (2009) finds a positive indirect relationship between CSR and banking performance and concludes that CSR directly influences financial performance mostly via easier access to capital and business reputation. Additionally, his findings show that CSR indirectly influences performance through social reputation.

However, the studies by Aupperle et al. (1985), Moskowitz (1972) as well as Alexander and Buchholz (1978) find the negative correlation between CSR and financial performance. The recent studies, moreover, extend the impact of CSR on other aspects of firms' activities. For example, Deng et al. (2013) investigate CSR and stakeholder value maximization and find that mergers by high CSR acquirers take less time to complete and are less likely to fail compared to low CSR acquirers suggesting that the acquirers' social performance is a crucial element of merger performance. Husted and Salazar (2006), on the other hand, compare the cases of altruism, coerced egoism and strategy examining the situation where firms have profit maximization and social performance.

In summary, the studies of the link between CSR and financial performance are still not conclusive. Particularly, many studies show positive link (Simpson and Kohers, 2002; Griffin and Mahon, 1997; Frooman, 1997; Waddock and Samuel, 1997), while other studies (Aupperle et al., 1985; Moskowitz, 1972; Alexander and Buchholz, 1978) find the negative correlation between CSR and financial performance. Some even state the absence of the link between CSR and financial performance specified (e.g. McWilliams and Siegel, 2000).

However, the nature of the results of the link between CSR and bank performance may depend on (1) methods and data used in analyses as well as on (2) driving motives of banks to engage in social activities as stated by Wu and Shen (2013) as well as Husted and Salazar (2006). Scholars (e.g. Wu and Shen, 2013) state that the link can be negative if banks conduct social activities based on *altruism* (where banks are engaged in CSR for their own sake and thus negatively impacting banks' financial performance). However, the relationship can be

positive if banks' CSR activities come from *strategic motives* in which CSR improves banks' image and ultimately their financial performance (e.g. Husted and Salazar, 2006). The last option is *greenwashing*, where there are no obvious cost differences between banks with and without CSR and thus no clear link is evident between CSR and banks' financial performance.

3 Methodology and data

In the first stage of the analysis the variables to represent bank efficiency, market concentration, risk and performance are obtained, the first by estimating a profit function and retrieving the efficiency scores and the others by construction. These are then used in the second stage where the CSR-financial performance nexus is determined using structural equation model with maximum likelihood approach.

3.1 Efficiency

Numerous studies have focused on measuring the efficiency of different sectors and firms in a number of countries, most of which use a production function. Although many different methods have been used, all are based on the transformation function, particularly those that describe production technology at firm level. The aim is to maximize value under the available technology, prices or other limitations. Assuming a common set of constraints, the efficiency is measured as the distance between individual production units and the best practice frontier. Different methods used to measure the frontier with the two most popular approaches being parametric and nonparametric modelling. DEA is a non-parametric approach using linear programming, while stochastic frontier is a parametric approach. Both allow the calculation of firm level efficiency.

In this paper stochastic frontier (SF) estimation is used as DEA does not take account of measurement errors and other type of statistical noise, assuming all deviations from the frontier are due to technical inefficiency. The profit efficiency of the bank measures how well profits are maximized with respect to a benchmark, or industry best practice. Following the existing literature (e.g. Fries and Taci, 2005) an intermediation approach is used to identify input-output variables for the banks in the estimations. The specifying equation to estimate efficiency levels is the widely used translog functional form for the profit function:

$$\ln(\frac{Total\ \Pr ofit}{w_2}) = \alpha_0 + \sum\nolimits_j \alpha_j \cdot \ln(y_j)_{it} + \frac{1}{2}\sum\nolimits_j \sum\nolimits_k \cdot \alpha_{jk} \cdot \ln(y_j)_{it} \ln(y_k)_{it} + \beta_1 \cdot \ln(\frac{w_1}{w_2})_{it} +$$

$$+ \frac{1}{2}\beta_{11} \ln(\frac{w_1}{w_2})_{it} \cdot \ln(\frac{w_1}{w_2})_{it} + \sum\nolimits_j \theta_j \cdot \ln(y_j)_{it} \cdot \ln(\frac{w_1}{w_2})_{it} + \gamma_t \ln(control)_t + v_{it} - u_{it} \quad (1)$$

where:
i – the bank index
t – the year index ($\alpha_{jk} = \alpha_{kj}$)
y – two outputs (total loans and total interest bearing funds)
w – two input prices (total interest expenses and overheads)
v_{it} – statistical noise with a symmetric distribution,
u_{it} – bank level inefficiency that has non-negative distribution

The profit function is normalized using the input price (overheads) to ensure price homogeneity, following the literature. (e.g. Berger et al., 2009). The model has a control variable (GDP per capita) to account for cross-country heterogeneity. There are many assumptions regarding the distribution of u_{it} (e.g. Aigner et al., 1977; Stevenson, 1980; Greene, 1990). We follow Battese–Coelli (1995) parameterization of time effects, where the inefficiency term (u_{it}) is modelled as a truncated-normal random variable multiplied by a specific function of time.

3.2 Performance, CSR, Risk and Concentration Variables

Rowley and Berman (2000) were the first who discovered the relationship between CSR and financial performance using the structural equation model. As stated by Smith (2004) SEM is a multivariate technique, which allows for the examination of a set of relationships between multiple dependent and independent variables. Therefore, we aim to investigate the link using SEM. Our analysis comprises two models, where in the first we use ROA and in the second we employ ROE as a proxy for bank performance. Our aim is to check whether our results are robust. We need to note that in the second stage of our analyses (structural equation models) we use profit to calculate ROA and ROE. There are many negative values in Net Income, therefore a common amount was added to all observations to reach a minimum positive unit (which is called profit in this case) and avoid difficulties with the natural log of a negative value, consistent with the literature (Fang et al., 2011; Bonin et al., 2005). Additionally, SEM is

sensitive to unbalanced panel data. All other variables remain the same across these two models.

Existing studies use various approaches to determine CSR:

1) investment approach is used in the case of relevant non-financial reports with detail the amount of money spent separately for each bank's initiative or during the filling in of specially designed questionnaires as evaluation respondents (senior executives of banks) contribution of CSR in banking performance (Sweeney, 2009; Wright and Vardiman, 2005);

2) index method – as an indicator of CSR using international indices such as: KLD 400 Social Index (Waddock and Graves, 1994; Becchetti et al., 2013; Servaes and Tamayo, 2013),

3) binary method – CSR is a dummy variable that identifies the presence of social initiatives in the bank's (given the "1") or absence (assigned parameter "0") (McWilliams and Siegel, 2000).

Considering the presence of limited data on transition countries our variable for CSR takes value of 1 if a bank has some social activities and 0 when it does not. However, this data is the best available to date for the banks of transition economies.

The recent studies use different risk measurements for the banking sector (e.g. credit risk, default risk). Following Boyd et al. (2006) and Marques et al. (2013) we use Z scores as the measure of bank risk as it is monotonically associated with a measure of a bank's probability of failure. Since the Z score indicates the distance to insolvency a higher Z score implies that a bank is less risky (Marquez et al., 2013). As the Z score is highly skewed we use the natural logarithm form following Marquez et al. (2013). ROA is calculated as Net Income divided by Total Assets and is taken from the bank financial statements retrieved using the Bankscope.

The existing literature uses various variables to proxy concentration and competition in a banking sector. Considering the heterogeneity nature of the banks we aim to use HHI as a concentration variable in our analyses following the studies by Boyd et al. (2006) and Marques et al. (2013). The index is equal to the squared sum of each banks' market share and thus a higher value implies a higher level of concentration.

3.3 Control variables

To account for cross-bank heterogeneity we use Loss (Loan Loss Provisions divided by Total Assets) and GDP deflators (a proxy for inflation) as well as growth of GDP (Table 1) are used to control for cross country heterogeneity respectively, following Marquez et al. (2013).

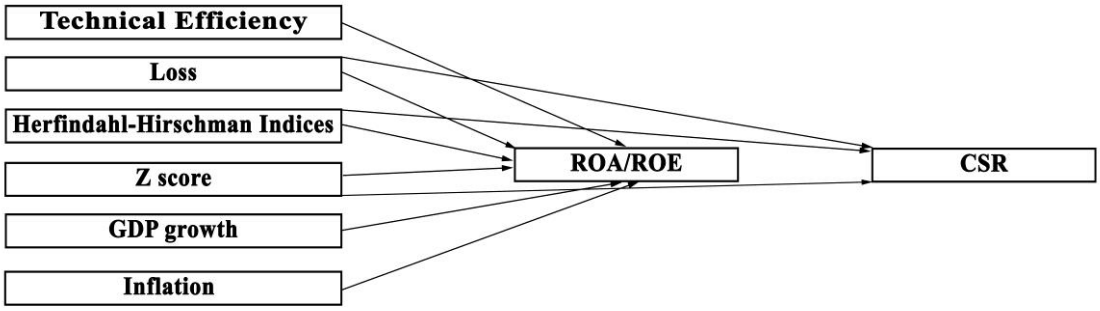
All figures of Table 1 are relative. Many recent studies ignore simultaneous effect between CSR and firm performance, however, following Wu and Shen (2013) we assume simultaneity effect between CSR and bank performance. Therefore, we use maximum likelihood approach for our SEM

Table 1. Definitions and Data Sources for Variables Included in the SEM

Variable name		Definition	Source
Basic	CSR	Banks' social activities / Index ranging from 0 to 1	Banks' web-site
	ROA	Profit divided by Total Assets	The Bankscope Database
	ROE	Profit divided by Total Equity	
Additional	Technical Efficiency	The efficiency is measured as the distance between individual production units and the best practice frontier	Own calculations
	HHI	Concentration variable / The index is equal to the squared sum of each banks' market share	The Bankscope Database
	Z score	The measure of bank risk / ROA plus equity-asset ratio divided by the standard deviation of return on assets	
Control variables	Loss	Loan Loss Provisions divided by Total Assets	
	GDP growth	Annual percentage growth rate of GDP at market prices	The World Bank Database
	Inflation	GDP deflator	

Although SEM encompasses a broad array of models (e.g. linear regressions, simultaneous equations, confirmatory factor analysis and so on), it is a way of thinking and estimating research objectives. Considering the philosophy of the existing literature (e.g. Wu and Shen, 2013; Simpson and Kohers, 2002; Soana, 2011), we estimate SEM for the link between CSR and bank performance as described in Figure 1.

Figure 1 SEM of Bank Performance and CSR



We investigate two models of SEM on the link between bank performance and CSR, where in the first the dependent variables are ROA and CSR, while in the second ROE replaces ROA

Considering the difficulties of SEM application with unbalanced panel data we include those banks which have at least one year financial statement at the Bankscope for the periods of our interest, i.e. 2002-2005 (stable) and 2008-2012 (turbulent).

3.4 Data

The sample includes 254 banks of 16 transition countries of the former Soviet Union and CEE. All the bank relevant data are in a common currency (US dollars) and taken from the Bankscope and the statistics for GDP deflator and growth of GDP are from World Banks' World Development Indicators (2013).

4 New evidence on the link between CSR and financial performance

4.1 Statistical description of variables

Table 2 provides the statistical description of the variables for two periods, 2002-2005 and 2008-2012, respectively. The table shows that ROA are quite similar in two periods. However, ROE has a negative mean with much larger standard deviation for the period 2008-2012. This is mainly due to the recent global crises (2008-2009) and to the changes at ForteBank JSC (Kazakhstan) during 2009-2010, namely, the bank's small equity in 2009 was significantly increased in 2010 and the presence of its large negative Net Income over 2009-2010.

Table 2. Statistical Description of Variables

Variable	Observations	Mean	Standard Deviation	Minimum	Maximum
2002-2005					
ROA	544	0.02	0.03	-0.61	0.11
ROE	543	0.14	0.19	-0.99	2.33
Technical Efficiency	496	0.44	0.21	0.05	0.91
Loss	499	0.01	0.06	-0.06	1.23
HHI	586	0.27	0.18	0.00	0.99
Z score	544	12.56	11.98	-7.20	76.11
GDP growth	587	7.65	4.11	-0.18	26.40
Inflation	587	8.25	7.48	-0.78	49.13
2008-2012					
ROA	1106	0.00	0.07	-1.11	0.78
ROE	1104	-0.10	3.51	-101.10	38.65
Technical Efficiency	810	0.42	0.21	0.03	0.90
Loss	1036	0.02	0.04	-0.07	0.53
HHI	1134	0.23	0.19	0.08	0.95
Z score	1106	16.26	26.82	-6.00	422.37
GDP growth	1136	2.73	6.85	-17.95	37.48
Inflation	1136	8.71	13.44	-18.93	74.85

The statistics show that the technical efficiency as well as Loss (Loan Loss Provisions divided by Total Assets) of the banks are quite similar in both periods. The concentration ratio is higher for 2002-2005 implying that the competition among the banks increased over 2008-2012, but the mean for Z score is smaller for 2002-2005 indicating that the banks tend to take lower risks over the turbulent period, 2008-2012 (i.e. higher Z score implies lower level of risk). While the mean for Growth (GDP growth) is smaller and that of inflation is higher during turbulent period

2008-2012, which could have been the possible cause of the recent financial crisis.

4.2 CSR and Bank Performance

We discuss only robust results, i.e. those significant in both models, where dependent variables are ROA and ROE respectively. Our results for SEM maximum likelihood show that the CSR positively impacts on ROA as well as on ROE in stable (2002-2005) and turbulent (2008-2012) periods (Table 3). This implies that the implication of CSR improves the banks' performance in transition economies, which is consistent with the results of recent studies (e.g. Wu and Shen, 2013).

Interestingly, technical efficiency negatively impacts on ROA as well as ROE over the stable period, but it has no affect during the turbulent period (Tables 3 and 4). This is perhaps due to the low efficiency levels of the banks during the early stages of transition to market economy (2002-2005). It should be noted that banks were actively increasing the profitability of scale in emerging markets during this period. Banks only increase the volume of active operations, especially mortgage lending. The quality of assets were not taken into account because the majority of loans were issued under the mortgaging scheme and real estate prices rising allow banks not to consider the quality of assets. This is what explains the rise in influence of technical efficiency. Another fact to support this thesis is the value of HHI, which positively affects ROA as well as ROE in both periods (e.g. Acharya et. al., 2001).

Table 3. SEM Results for the Link between CSR and Return on Assets

Variables	**2002-2005**	**2008-2012**
1st model		
Return on Assets (Dependent)		
Corporate Social Responsibility	3.1040 (1.0343)***	3.0670 (1.0229)***
Technical Efficiency	-0.638 (0.320)**	0.2649 (0.2039)
Loss	0.1585 (0.1151)	-0.2400 (0.1238)*
Herfindahl-Hirschman Index	0.4811 (0.1635)***	1.3165 (0.2767)***
Z score	0.5950 (0.1503)***	0.1276 (0.1387)
GDP growth	1.7008 (0.3942)***	0.2587 (0.1300)**
Inflation	0.8454 (0.2028)***	0.9482 (0.1617)***
Constant	-3.8293 (1.7225)**	-0.3981 (1.0604)
Corporate Social Responsibility (Dependent)		
Return on Assets	-0.1693 (0.0394)***	-0.1480 (0.0354)***
Loss	0.0154 (0.0254)	0.0561 (0.0202)***
Herfindahl-Hirschman Index	0.1026 (0.0408)**	-0.0766 (0.0519)
Z score	0.0920(0.0331)***	0.0042 (0.0262)
Constant	1.1330 (0.2307)***	1.0403 (0.1859)***
Probability >chi2	0.1288	0.5022
Stability Index	0.7249	0.6737
Number of observations	342	503

Structural Equation model with Maximum Likelihood approach is utilized. All variables are in a natural log form. The Probability >chi2 as well as the Stability Index show that the model is well fitted and stable.

Tregenna (2006) finds a positive link between concentration and profitability for the US banking sector over 1994-2005. Additionally, Ardianty Fadilla Dwi (2011) shows similarly results, HHI are positively affecting ROE.

In the second case, the effect of HHI on ROA and ROE in the turbulent period increases, that can be explained by the fact that banks use their monopoly position for even higher earnings. Although Loss does not effect in a stable period, it negatively impacts on ROA and ROE in the turbulent period. This is consistent with the economic theory as the influence of crises is associated with falling prices and foreclosure problems.

Table 4. SEM Results for the Link between CSR and Return on Equity

Variables	2002-2005	2008-2012
2nd model		
Return on Equity (Dependent)		
Corporate Social Responsibility	3.3638 (1.0405)***	3.1394 (1.0126)***
Technical Efficiency	-0.8196 (0.3126)***	0.0751 (0.1930)
Loss	0.0596 (0.1114)	-0.3290 (0.1179)***
Herfindahl-Hirschman Index	0.5026 (0.1582)***	1.2319 (0.2663)***
Z score	0.3081 (0.1454)**	-0.0882 (0.1307)
GDP growth	1.5349 (0.3856)***	0.2762 (0.1231)**
Inflation	0.8030 (0.1975)***	0.8571 (0.1554)***
Constant	-1.5519 (1.7026)	1.4726 (1.0208)
Corporate Social Responsibility (Dependent)		
Return on Equity	-0.2019 (0.0479)***	-0.1688 (0.0429)***
Loss	0.0009 (0.0254)	0.0413 (0.0211)**
Herfindahl-Hirschman Index	0.1225 (0.0455)***	-0.0800 (0.0540)
Z score	0.0530 (0.0320)*	-0.0238 (0.0274)
Constant	1.6901 (0.3518)***	1.4192 (0.2806)***
Probability >chi2	0.3665	0.2271
Stability Index	0.8242	0.7279
Number of observations	342	502

Structural Equation model with Maximum Likelihood approach is utilized. All variables are in a natural log form. The Probability >chi2 as well as the Stability Index show that the model is well fitted and stable.

Additionally, Z score positively affects ROA and ROE only in a stable period. This implies that lower risk taking (i.e. an increase in Z score) would improve ROA and ROE as Table 2 indicates that the banks of the transition countries are taking higher risks during a stable period. This result coincided with other scholars (e.g. Beck and Demirgüç-Kunt, 2009; Tabak et. al. 2012). Interestingly, the impact of Z score on ROA and ROE is insignificant for the turbulent period (2008-2012). Firstly, it can be explained by the fact that the data had a strong destructive influence by ROE of ForteBank JSC (Kazakhstan). Secondly, there is a higher level of stability to the crisis for the banking systems of developed countries than for the countries that made up the research selection.

Additionally, growth positively impacts on ROA and ROE, but the magnitude of the effect is higher over the stable period. This is consistent with the theory that economic growth during a stable period provides more opportunities for banks to expand. The same results were obtained by Demirgüç-Kunt and Huizinga (1999), namely, using bank level data for 80 countries in a global context the influence of GDP on bank performance is positive, but insignificant.

Interestingly, the level of inflation positively impacts on ROA as well as ROE in both periods (e.g. Demirgüç-Kunt and Huizinga, 1999). For example, the Ukrainian banking sector experienced the systemic banking crisis over the period 2008-2009 and the positive balance of deposits appeared only in the middle of 2009. The same situation was in other former Soviet Union countries. Additionally, ROA and ROE affect negatively CSR in both periods and this means, perhaps, that less profitable banks are more interested to engage in social projects.

However, Loss is significant and positive for the turbulent period implying that the banks have stronger willingness to participate in social programs when the economy is turbulent resulting higher Loss. Perhaps, the banks believe that improving their image through CSR strategy would ultimately provide higher profits and more resources over the turbulent period.

5 Conclusions

The results show that CSR is primarily a business strategy that has a positive effect on bank performance in transition countries, consistent with the situations in developed and developing countries. Therefore, CSR activities are necessary to set align with banks' strategies and focus on the long term.

Our results indicate that CSR activities would improve the financial performance of the banks of the transition countries in both, stable (2002-2005) and turbulent (2007-2010) periods. However, the impact of ROA and ROE on CSR is negative in both periods and this implies that financially less sound banks of the transition countries have comparatively stronger willingness to conduct social activities**.** The results also confirm that there is a simultaneous effect between corporate social responsibility and bank performance. Moreover, the presence of positive impact of CSR on ROA as well as ROE is consistent with the results of the study by Wu and Shen (2013). The latter also considers the endogenous problem in CSR-bank performance models utilizing a two-stage procedure developed by Heckman (1978). Our results, similar to those of Wu and Shen (2013), indicate a strategic choice to be the motive for the banks of transition economies to engage in social activities as their goal seems to increase their profits through improving their images by participating in CSR.

Additionally, the levels of concentration ratio as well as risk taking behavior do not impact on CSR, however, higher Loss would motivate the bank to increase their profits through improving their images participating in CSR in a turbulent period.

The use of SEM revealed a causal link between CSR and ROA, ROE. Thus, on the basis of the obtained results it can be concluded that CSR has a greater influence on the receiving profit of banks than making a profit for the implementation of social initiatives. This again allows confirming the conclusion that CSR is a business strategy and is able to bring real benefits to banks.

This paper has tried to provide an initial contribution to the study of the link between bank performance and corporate social responsibility for the transition countries comparing this relationship over the stable (2002-2005) and turbulent (2008-2012) periods. However, the future research may focus on more sophisticated variables of CSR to study the banking sectors of transition economies.

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