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## IS REPUTATIONAL RISK IMPORTANT FOR BANK PERFORMANCE? EVIDENCE FROM CEE-11 COUNTRIES

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The 2007-2009 revealed the weaknesses of the growth foundation and failure of risk management systems in large global banks. Consequently, there has been renewed interest in the creation of stable and functional risk culture. Protecting a financial institution's reputation is among the most significant challenges facing financial firms. Thus the aim of this paper is to analyze why reputational risk is important for banks, and to trace its sources and consequences. In the empirical part, the paper proposes a new method to measure reputational risk: Stakeholder Reputation Score (SRS). The panel regression models are used to examine the impact of the SRS indicator on bank performance, for listed banks in the CEE-11. The estimation results indicate that the efforts to enhance bank reputation may not have a positive effect on bank performance, which may explain why many banks deal with reputational risk mainly in the context of minimizing loss after a scandal, rather than treating it as a strategic, long-term goal.

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### 1. INTRODUCTION

The post-crisis period has brought increased interest in the reputational risk, particularly within the banking sector and among the customers. Crisis and post-crisis restructuring always result in an increased interest in the issues of trust and corporate culture, as scandals and excesses of the pre-crisis period come to light, and the amounts spent to rescue banks raise public opposition (Walter 2013). The 2007-2009 crisis caused multibillion losses and revealed the weaknesses of the growth foundation and failure of risk management systems in large global banks. Consequently, there has been renewed interest in the creation of stable and functional risk culture. This includes, among others, a broadening of the scope of analyzed risks, beyond the regulatory requirements. Moreover, as the empirical research has indicated, the reputational risk increases with the scale and profitability of banks, making

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the subject even more relevant in a global system characterized by a highly concentrated banking markets (Fiordelisi, Soana, Schwizer 2011). Today, protecting a financial institution's reputation is among the most significant challenges facing financial firms and trust in the integrity of the financial sector is the cornerstone of its stability and growth. Thus the aim of this paper is to analyze why reputational risk is important for banks, and to trace its sources and consequences, as a self-standing type of risk, particularly in the context of the drastic drop in confidence in banks in the post-crisis period.

The Basel 2 Agreement stressed the importance of three main categories of risk: credit, market and operational; the Basel Committee (2001) described the latter as one of the three main categories of banking risks which potentially can be very dangerous to bank stability. Its role was further accented by the 2008 crisis. The Basel Committee on Banking Supervision has defined operational risk as the possibility of direct or indirect loss resulting from inadequate or failed internal processes, actions of people or systems, or losses related to the impact of external events. Although the definition was quite broad, the reputational risk, as well as the strategic one, have not been included. The methodology to manage and measure operational risk has been advancing rapidly in recent years, fuelled by a number of well-publicized case-studies, such as the bankruptcy of Barings and the problems of Société Générale due to rogue traders, the Allied Irish Bank and UBS losses due to unauthorized trading, or the huge sums paid by banks and insurance companies after the 2008 crisis to settle allegations of sales abuse. It took over a decade to develop an acceptable infrastructure for operational risk management and reputational risk is most probably at the beginning of a similar process.

Reputational risk is not a new concept, but the efforts to manage it as a self-standing type of risk, not within an operational risk framework, are quite recent. However, it is more difficult to manage reputational risk than other risk categories as it is difficult to define and quantify, and relies heavily on external perceptions. Moreover, sometimes it is viewed as a "risk of risks" or seen as the impact of other events (ACE 2013). Consequently, in the empirical part, this paper proposes a new method to measure reputational risk, based on the bank stakeholders' perspective. The reputational risk is approximated by a new indicator: Stakeholder Reputation Score (SRS). Then panel regression models are used to examine its impact on bank performance, for listed banks in the CEE-11.

The paper is organized as follows: Sections 2 and 3 review the approaches to define the reputational risk, Section 4 analyses the literature on factors causing reputational risk, Section 5 reviews the approaches to measure reputational risk, Section 6 describes the empirical methodology and

summarizes the results of the panel data models aiming at measuring the reputational performance premium for CEE banks, approximating reputational risk by Shareholder Reputational Score, and the last section concludes the paper.

## **2. REPUTATIONAL RISK FROM A REGULATORY PERSPECTIVE**

Risk appears with every banking product and operation, and managing risk constitutes an everyday bank activity. Risk can be defined as uncertainty concerning the return or outcome of an investment or an action. Risk management is a process by which managers identify, assess, monitor and control risks associated with financial institutions' activities (Koch, Scott MacDonald 2015). Its objective is to minimize the negative effects on the financial result and capital of a bank. However, in financial institutions risk can be treated both as a threat and also as an opportunity (Marcinkowska 2014). Banks manage risk at many levels, taking account of both macro and micro factors, in many cases external to the decisions taken by the bank. In many cases risk is interconnected, both within the bank and in the whole system. Risk management encompasses the process of identifying risks to the bank, measuring exposures, ensuring that an effective capital monitoring programme is in place, monitoring risk exposures and corresponding capital needs on an ongoing basis, taking steps to control or mitigate risk exposures and reporting to senior management and the board on the bank's risk exposures and capital positions (Basel Committee 2011). In the future, the new challenges will be coming from expanding regulations, raising customers' expectations due to technological progress and the emergence of new types of risks (McKinsey 2015).

Historically, the efforts in managing risk by banks tend to focus on credit and market risk. However, risk management in banking has been transformed over the past decade, largely in response to regulations that emerged from the global financial crisis. Reputation risk was not included in the recommendations of the Basel Committee on the modelling of risk in the banking sector. Basel 2 (2004) and Basel 3 (2010) kept reputational risk out of pillar 1 capital requirement and reputational risk is currently not subject to any specific capital requirements in the EU. Capital Requirements Directives (2011) applicable for EU countries require only that the competent authorities evaluate reputational risks arising from securitization transactions and that financial institutions develop methodologies to assess the possible impact of reputational risk on funding positions (Dey 2015). In the US, reputational risk is one of the Federal Reserve System's categories of safety and soundness and fiduciary

risk (credit, market, liquidity, operational, legal, and reputational) and one of three categories of compliance risk (Business Insurance, 2016).

Reputational risk – damage to an organization through the loss of its reputation, can arise as a consequence of operational failures, as well as from other events. Both operational and reputational risks belong to a similar area, as operational problems can have negative consequences for the bank's reputation, affecting client satisfaction and shareholder value. However, operational risk can also include a broader set of incidents, such as fraud, privacy protection, legal risks, physical (e.g. infrastructure shutdown) or environmental risks. In light of the significant number of recent operational risk-related losses incurred by banks, in June 2011 the Basel Committee published "Principles for the Sound Management of Operational Risk", which incorporated the lessons from the financial crisis. The eleven principles cover governance, risk management environment and the role of disclosure, and address the three lines of defence: business line management, an independent operational risk management function and an independent review. In 2014, the Committee conducted a review in the form of a questionnaire, involving 60 systemically important banks in 20 countries, in which the banks self-assessed their implementation of the Principles. A key finding of the review was that banks have made insufficient progress in implementing the Principles (Basel Committee 2014). Hence in 2014 the Basel Committee proposed a revision to its operational risk framework that set out a new approach for calculating operational risk capital. In addition the Financial Stability Board stressed the importance of operational risk in the post-crisis environment, defining it as a synthetic one, including people risk, outsourcing risk, internal and external fraud, money laundering, and technology risk (FSB 2012).

In 2009, the Basel Committee passed a document addressing the need to strengthen risk management by banks, in which reputational risk was defined as a multidimensional process, based on the perception of other market participants (Basel Committee 2009). Reputational risk was explained as the actual or potential risk related to earnings or capital, arising from the negative perception of financial institutions by the current and potential stakeholders (customers, counterparties, shareholders, employees, investors, debt-holders, market analysts, other relevant parties or regulators) that can adversely affect a bank's ability to maintain existing, or establish new, business relationships and its continued access to sources of funding, including the interbank market or the securitization processes. In this document the Basel Committee stressed the need to manage reputation risk, identifying its sources and taking it into account when testing the resilience of a bank business model to external shocks (Basel Committee 2009). The Fed's *Commercial Bank Examination*

*Manual* defines reputational risk as “the potential that negative publicity regarding an institution’s business practices, whether true or not, will cause a decline in the customer base, costly litigation or revenue reductions” (Business Insurance 2016).

### **3. REPUTATIONAL RISK AS INTERNAL AND EXTERNAL FACTOR**

Risk management is result-oriented, with different priorities given to the avoidance of operational and reputational problems and a different time horizon for maximizing the value of the company. Reputational risk is associated with faulty strategy, poor management and leadership, or a wrong system of incentives, inadequate supervision and problematic corporate culture. Reputational risk can be defined as the risk of economic losses associated with a negative image of the bank by the clients, supervisors, regulators and the public. This and similar definitions stressed that reputational risk is multidimensional and reflects the perception of other market participants.

Reputational risk can also be defined as the risk to a bank’s goodwill which is not associated with a deterioration of its book value and is typically reflected in a falling stock price (Walter 2013). There is also a problem of the time frame. In most cases, the effects of a scandal or unexpected loss is immediate. The loss is seen as a signal that the company has a weak control environment. Shareholders may also sell shares if they believe that future losses are inevitable. However, there are also cases of more prolonged problems with corporate culture which gradually erode customers’ and business partners’ trust. In some cases, reputational problems have a negative impact on the financial results, but there are also opposite cases (Marcinkowska 2013).

Reputational risk is not regulation or compliance-driven, but determined by stakeholders expectations. Steinhoff and Sprengel (2014) observed that risk awareness is probably the most important factor for risk reduction, so it should be placed inside the corporate governance framework, particularly in the “who is responsible for what” approach. However, corporate culture is also a very broad concept and can be defined in many ways (Guiso, Sapienza, Zingales 2006). The development of corporate culture is a continuous process, where the results are visible in the long term. Its definitions emphasize that it rests on a set of values shared by a community, which affects its organization and motivates behaviour within the organization (Carretta, Farina, Schwizer 2007). A period of crisis often results in an increased interest in corporate governance. However, changes in prudential regulations correcting errors in

risk management are usually easier than the long-term changes in the corporate culture of market participants (Walter 2013). There are some mechanisms which can be used in enhancing trust, such as codes of ethics, internal anti-fraud systems, independent ethics audits and reputational indices. Indirect measures involve membership of professional associations or in self-regulatory organizations, which protect the reputation and discipline among its members, setting standards in codes of conduct and developing mechanisms of better risk assessment processes (Morris and Vines 2014; Marcinkowska 2013).

Reputational risk is usually not due to incidental events, but rather is the result of long-term poor decision-making processes. The causes are often linked to the pressures on results, the asymmetry of the profit to risk ratio, conflict of interest related to the complexity of bank business models and to remuneration based on bonuses (Walter 2013). Financial services differ significantly from the industrial sector. The key stakeholders of banks are depositors, creditors, and the government. As banks are financed largely through debt, shareholders should be of a lesser importance than in corporations. However, bank governance prioritizes shareholder interests, particularly when ownership is concentrated in institutional investors with a higher risk tolerance. Consequently, governance of financial institutions may accept excessive operational risk, which may erode shareholder wealth and may fail to meet the expectation of other stakeholders (Dow 2014).

Inside the banking sector, reputation is often treated in the same way as a brand, i.e. an intangible asset that can be impaired by operational mistakes or inappropriate behaviour. In this approach reputational risk is a derivative risk, arising as a result of damaging action (Steinhoff and Sprengel 2014). Reputation may also serve as a cushion against losses, i.e. companies with a better reputation suffered less severe declines in market value during the crisis periods although the empirical evidence varies in this respect – in some cases good reputation softens the impact of failures, in others it may be dangerous, as other objective indicators of strength, such as capital or liquidity, may seem irrelevant. The third way is not to treat it as an asset, nor as a kind of equity capital, but as a set of obligations towards stakeholders, which have to be fulfilled (Steinhoff and Sprengel 2014). Thus, reputation can be summed up as having three main manifestations:

- reputation as asset (stakeholders' goodwill),
- reputation as liability (stakeholders' expectations),
- reputation as capital (buffer against failure, helping to maintain goodwill when failing to meet expectations).

The impact of reputation on performance is a direct consequence of the interaction of those domains (Steinhoff and Sprengel 2014).

#### 4. REPUTATIONAL RISK IN GLOBAL SURVEYS

The strategy of the largest global banks has evolved from simple, commercial institutions, providing selected services for a specific customer segment, to complex conglomerates serving millions of customers in many countries. Traditionally, the financial services industry worked according to easily understandable principles, with clearly defined risk profiles, but in the last twenty years those divisions were blurred, and new players such as hedge and equity funds were offering shadow banking services (Rajan 2005). However, the strategy of a “financial supermarket” and a “too big to fail” scale turned out to be very risky. Although among the main causes of the global financial crisis was the systemic risk associated with the activities of large, global banks, after the crisis, their role has been further strengthened. In many countries, post-crisis restructuring took the form of mergers and acquisitions, particularly of investment banks by the universal ones in the US, or merging the nationalized banks to control losses (the Netherlands, the UK), so the question of managing the reputation risk in the process of acquisition is another important challenge (Schoenmaker 2011, Dermine 2006).

The 2008 financial crisis had a significant effect on bank reputation and trust, and only recently one can observe a gradual rebound of trust: financial services have recorded percentage point increase from 43% in 2012 to 51% in 2016 on a global basis. Financial services, however, is still the least trusted industry among those surveyed by the Edelman Trust Barometer (2016). Inside the industry, employees are more trusted than senior executives and CEOs in communicating about topics like financial earnings, crises and the treatment of customers. In the US, the Reputation Institute compared the financial industry problems with the reputation crisis of tobacco industry in the past. In the post-crisis period the financial sector has been obliged to pay an incredible amounts of litigation expenses, the most notable being JP Morgan paying in 2014 a 13 billion dollar settlement to the US government over behaviour leading to the crisis, Deutsche Bank investigated for tax evasion and money laundering, in addition to Libor fixing in 2012, and large banks fined for the Libor scandal in 2015. However, in 2016 for the first time the large banks have risen in the US reputation – of the 33 banks evaluated, ten banks had an ‘excellent’ reputation among their customers, compared to eight in 2015 (American Banker 2016). Other surveys have also shown that inside the banking industry, the best reputation is enjoyed by the divisions related to new technologies, e.g. Internet banking and ATM, although not telephone banking (Ernst and Young 2014).

As early as in 2005, the Economist Intelligence Unit Report observed that protecting a firm's reputation is the most important and difficult task facing a firm's managers and reported that in a survey of 269 senior executives responsible for managing risk, reputational risk emerged as the most significant threat to business out of the choice of 13 categories of risk. Reputational risk was defined as an event that undermined public trust in bank products or brand (The Economist 2005). Reputation is based on aggregate past experience, however, it is directed towards the future and reflects the expectations concerning the firm (Edelman Trust Barometer 2014). Customers satisfied with the services of the bank have a greater loyalty which helps to improve the bank's image and its competitive position (Fiordelisi 2009). In contrast, problems with the bank's reputation can lead to (Eccles, Newquist, Schatz 2007):

- loss of current or prospective customers,
- loss of employees or managers in the organization,
- departure of current or future business partners,
- an increase in the cost of financing through a loan or capital markets.

The growing awareness of reputational risk is reflected in the annual survey conducted by the European Banking Authority and reported in "*Risk Assessment of the European Banks*". This document includes a section on reputational risk, particularly assessing its impact on consumer confidence (EBA 2014, 2015, 2016). The reports showed the growing awareness of the reputational risk in the European banking sector, as indicated by 33% of the responding banks in 2013, 44% in 2014, and 68% in 2015. Numerous case studies and empirical studies showed that reputational risk is particularly important for large global banks and those with relatively low capitalization, so it should be an important subject of supervisory concern. According to EBA reports, a particularly detrimental impact on consumers came from failures with regard to rate benchmark-setting processes, the misselling of banking products, and more recently misconduct related to foreign exchange rates, violations of trade sanctions and redress for payment protection insurance, and floors for mortgage loans at variable interest rates. The scope of identified detrimental business practices remains wide and misconduct costs remain high. The share of banks indicating that they paid out more than one billion euros in compensation, litigation and similar payments, increased in 2015 to 32% of participating banks (16% in 2014 and only 8% in 2013) (EBA 2014, 2015, 2016). Efforts to adjust the culture and risk governance is the most widely used approach to address reputational and legal risks (85% in 2016), an increase from less than 50% of respondents in previous surveys. However, in the 2016 report only about 10% of the surveyed banks indicated their

intention to adjust products and business models in an effort to address reputational and legal risks.

Kaiser (2014) analysed two surveys conducted by KPMG among the G-SIBs (the Global Systemically Important Banks) in 2013 and 2014 and were responded to by ten banks and a survey of the German banks by 18 institutions, 13 of which belonged to the 20 biggest German banks in 2012. In the surveys, 60% of both global and German banks asserted that reputational risk stands on its own, rather than being a consequential risk, or trigger to other risks; however, most banks did not include it in their risk inventory and admitted that it is not explicitly addressed in their risk strategy. Responses to another question showed that only 55% of the G-SIBs and 60% of the German banks prioritized their stakeholders in order to manage reputational risk more efficiently. German banks gave the highest priority to customers, while global banks gave top priorities to customers, employees and regulators. The surveys demonstrated that banks put the main emphasis on the self-assessment of reputational risk, only supplementary emphasis on expert opinions, interviews with senior management and analysis of press and social media; and that they register and report losses due to reputational risk mainly as a part of an operational risk database, so although banks were aware of the need to include reputational risk in their overall risk mapping, in everyday life they dealt with it in an operational risk management framework.

## **5. PROBLEMS WITH THE MEASUREMENT OF REPUTATIONAL RISK**

Efforts to manage operational risk were successfully quantified in the last decade, but for reputational risk the typical approach is still to monitor it inside the broadly defined ‘risk culture’. What gets measured gets managed (Diermeier 2008), but the quantification of reputation risk is extremely difficult as there is no universally accepted methodology and the concept is broad. If one defines reputational risk as unexpected losses due to the reaction of stakeholders to an altered perception of an institution (Kaiser 2014), there are many possible ways of approximating this risk. Moreover, reputational risk does not act in isolation, on the contrary it is interrelated to many other types of risks. Some sources of gain/loss in reputational capital include: economic performance, stakeholder interface and legal interface, which can be reflected in client flight, loss of market share, investor flight and increase of cost of capital, talent flight and increase of contracting costs (Walter 2016). Assuming that reputational risk is managed through strong corporate governance, another approach is to create indexes which measure the quality of firms’ corporate

governance structure and link it to the stock price-based performance of the company, assuming that the change in corporate governance index is a signal of quality of firm management (Fox, Gilson, Palia 2016).

Empirical studies typically focus on various surveys, case-studies or media coverage of detrimental events. There is also a lack of tools to link reputational risk with financial performance and it is unclear how reputation risk can impact capital (Diermeier 2008). In many companies, reputational problems are still considered rather as a problem of public relations than a strategic one and the response is frequently inadequate to the scale of the damage. The problem of reputational risk measurement is still aggravated for CEE banks, as the stock markets there are not efficient in discounting information (Kil 2015), so the panel data models using stock market information may be misleading.

Assessing reputational risk is most often not an objective process, but rather a subjective assessment that could reflect a number of different factors. Reputation could be perceived as an intangible asset, synonymous with goodwill, which is difficult to measure and quantify. Consistently strong earnings, a trustworthy board of directors and senior management, loyal and content branch employees, and a strong customer base are just a few examples of the positive factors that contribute to a bank's good reputation (Business Insurance 2016).

Establishing a strong reputation provides a competitive advantage. A good reputation strengthens a company's market position and increases shareholder value, and it can even help attract top talent. Communication between a bank and its stakeholders can be the foundation for a strong reputation. Bank examiners may consider whether an institution responds to customer concerns; whether the stock analyst recommends buying or selling and why; and what the shareholders, employees, or general public are saying about the institution. They could also consider whether the institution is expanding outside its normal geographical area and is supportive of the community. On-site, examiners will talk to both bank employees and management to get a sense of corporate ethics, and assess whether an institution's expertise is adequate and that controls are in place to oversee growth if the institution should engage in riskier products or enter into new business lines (Brown 2016).

Agencies, such as Standard & Poor's, Moody's and Fitch have significantly increased their emphasis on reputational risks related to corporate governance. Rating agencies primary focus is the ability and willingness of an entity to make full and timely payment of debt service on its financial obligations. However, a damaged reputation can significantly affect the performance and, ultimately, the ability to borrow capital. For example, S&P issued a statement

saying that costs associated with the Costa Concordia disaster had negatively affected the firm's operating performance in 2012. Another example of the importance of reputation in obtaining the rating score are public universities in the US, which rely heavily on their reputation and brand as a strategic asset (Business Insurance 2016).

A measure that is sometimes used is the difference between the immediate costs of a crisis versus damage to a firm's market capitalization in the period following a crisis event (ACE 2015). Another frequent approach in modelling reputational risk is to analyze it within an operational risk framework, assuming that operational loss events can lead to significant reputational loss, and check the impact of bank reputational problems on bank market capitalization. Reputational loss is there defined as market value loss that exceeds announced operational loss (Eckert, Gatzert 2015). Another frequent approach is to conduct an event study analysis of the impact of operational loss events on the market values of financial institutions by examining a firm's stock price reaction to the announcement of particular operational loss events such as internal frauds, estimating the Reputational Value at Risk at a given confidence level, which represents the economic capital needed to cover reputational losses over a specified period (Micocci et al. 2009).

## **6. A PROPOSAL FOR AN APPROACH AT MEASURING REPUTATIONAL RISK IN BANKING**

The first step of empirical analysis was to construct an index of reputational risk – Stakeholder Reputation Score (SRS), then its impact on bank performance was estimated. In the literature there are various attempts at approximating reputational risk in a comprehensive way (Zaby, Pohl 2019), which, however, is difficult to quantify. In the authors' research the index includes the variables for which there are available data and which can be quantified. Consequently, reputational risk is represented by a three-dimension synthetic index, which is based on the perspectives of three major bank stakeholders:

- market participants' perspective,
- clients' perspective,
- investors' perspective.

After a number of approximations, the three dimensions of the index were defined as follows:

SRS equals to credit agencies' bank individual ratings + bank growth + bank stock returns.

Bank stock returns are typically used in measuring reputational risk (Fox, Gilson, Palia 2016). In the SRS index it was supplemented by bank credit ratings and bank deposit growth. There is a long debate on the relevance of the rating information and rating agencies' credibility, particularly after the global crisis (Grothe, 2013; Eckert, Gatzert 2015), but nevertheless credit rating encompasses a broad range of information. Credit rating expresses credit rating agencies' forward-looking opinion about the creditworthiness of the obligor – the capacity and willingness to meet its financial obligations in full and on time (S&P, 2016) and represents an evaluation of the qualitative and quantitative information on the prospective debtor (ECB, 2009). In the model, the ratings were employed both in the macroeconomic dimension at country level (CR) and in the microeconomic dimension at bank level. Deposit growth reflects client's expectations on bank growth and stability and bank stock returns represent the market component.

Table 1  
Scoring scale applied in the model

Rating agency assessment			Scoring scale
S&P	Fitch	Moody's	
AAA	AAA	Aaa	16
AA+	AA+	Aa1	15
AA	AA	Aa2	14
AA-	AA-	Aa3	13
A+	A+	A1	12
A	A	A2	11
A-	A-	A3	10
BBB+	BBB+	Baa1	9
BBB	BBB	Baa2	8
BBB-	BBB-	Baa3	7
BB+	BB+	Ba1	6
BB	BB	Ba2	5
BB-	BB-	Ba3	4
B+	B+	B1	3
B	B	B2	2
B-	B-	B3	1

Source: own study.

The three dimensions in SRS were calculated as follows:

a. ratings

long-term credit rating scores from major credit agencies were employed on a scale ranging from 1 to 16 (Table 1). In case of differences between

agencies, the average score (arithmetic mean) in points was calculated. The scores were adjusted for a positive or negative rating perspective (+/- 0.5 point); a stable outlook did not cause any adjustment in the score. The numerical values in conversion scale are unimportant, as for the model a relative score was used, as explained below;

b. deposit growth

the annual growth rate of current deposits from the non-financial sector was used, converted to points;

c. stock returns

the annual rate of return of bank stocks was used, adjusted for splits and dividend paid (in points).

The point values of the three dimensions of the SRS were calculated as follows:

- bank results for each indicator were divided into ten deciles for the whole group in a given year;
- the median for the group had a value of 0 (neutral);
- each subsequent decile above the median for all three dimensions had a score ranging from +1 to +5, while each subsequent decile below the median had a score ranging from -1 to -5.

Consequently, the SRS index ranges from -5 to +5 for each dimension and from -15 to +15 for all three indicators and represents an approximation of the bank's reputational risk measured in points.

## **7. REPUTATIONAL RISK AND BANK PERFORMANCE IN CEE-11 COUNTRIES**

Reputation can be perceived not only as a problem, but as an asset, contributing to a performance premium. The empirical part adopts this approach, examining the relationship between the proposed in point 6 indicator of reputational risk – Shareholder Reputational Score, and bank performance. To test the hypothesis about the role of reputational risk on bank performance in CEE-11 countries, the GMM dynamic panel data model was used, employing individual bank data from the Bankscope/Orbis database. In the sample, 42 banks listed on CEE stock exchanges were analysed (15 from Poland, 12 from Croatia, 4 from Bulgaria and Slovakia, 3 from Romania and 1 from the Czech Republic, Hungary, Lithuania and Slovenia), for which credit rating scores were available from at least one of the three major agencies: Standard & Poor's Rating Services, Moody's Investors Service Inc. or Fitch Ratings Ltd.

In the dynamic panel data model for the period 2009-2014, the dependent variables were:

- Multi Level Performance Score (MLPS) – a comprehensive indicator of the long-term bank performance.

MLPS was defined as the sum of points awarded in five key areas for evaluation of bank performance: three performance indicators (ROE, cost to income ratio and loans to asset ratio), and two sustainability indicators (Z-score and NPL) (Miklaszewska, Kil, 2016). Thus,  $MLPS = ROE + C/I + L/A + Z\text{-score} + NPL$ . The score was calculated as follows: for each indicator the whole group was divided into ten deciles, the median value is 0 (neutral); each subsequent decile above the median for the ROE, L/A, and Z-score ranged from 1 to 5, and each successive decile below the median had negative value and ranged from –1 to –5. For C/I and NPLs the signs were opposite. This indicator has a simple interpretation: the higher the value of the MLP score, the better the assessment of the bank's results.

- Return on Equity (ROE), representing the short-term perspective.

Empirical analysis used dynamic panel versions of the GMM model which measured the impact of reputation risk (the SRS score) on bank performance,

Table 2  
Description of explanatory variables

Symbol	Description	Rationale / data source
a. Macroeconomic variables		
$\Delta GDP$	Real GDP growth rate (%)	Macroeconomic business cycle (World Bank: World Development Indicators)
HHI	Herfindahl-Hirschman index for credit institutions	Banking market concentration (BSCEE Review and ECB Database)
SB	Total bank assets (% of GDP)	Size of the banking sector (Raiffeisen Research)
CR	Country LT credit rating	Country credit standing (Bankscope, rating agencies' internet sites)
b. Bank-level variables (data source: Bankscope)		
$\ln\_TA$	Logarithm of Total Assets (in USD)	Bank size
SRS	Reputational risk index	Approximation of reputational risk
L_D	Loans to Deposits ratio	Bank funding risk
NetI_NoIOI	Net Interest Income / Total Non-Interest Operating Income	Income diversification (bank business model)
S_TA	Securities/Total Assets	Market risk
LA_DSTF	Liquid Assets / Deposits and Short-Term Funding	Liquidity risk

Source: own study.

approximated by the comprehensive Multi Level Performance Score (MLPS) and profitability indicator (ROE). For robustness, bank stocks rate of return (RR), as a dependent variable, was also tested, but the SRS was insignificant for that model. The selection of control variables was based on the literature reviews and tested by a correlation matrix, as presented in Table A2 in the appendix. The explanatory variables are defined in Table 2.

Then, the following regression was estimated:

$$\begin{aligned}
 Performance_{it} = & \\
 & \alpha + \alpha_0 Performance_{it-1} + \sum_{j=1}^N b_j macrovariables_{jt} + \\
 & + \sum_{j=1}^M c_j bank\_level\_variables_{jt} + \varepsilon_{it},
 \end{aligned} \tag{1}$$

where  $Performance_{it}$  denotes: Multi Level Performance Score  $MLPS_{it}$  and Return on Equity  $ROE_{it}$  for each banks  $i$  and for each year  $t$ . Sets of *macrovariables* and *bank\_level\_variables* are listed above,  $N=4$  and  $M=6$ . The variable  $\alpha$  is a constant term,  $\varepsilon_{ij}$  denotes the error,  $a_0$ ,  $b_j$ ,  $c_j$  are the regression coefficients.

The generalized method of moments (GMM) estimator, as proposed by Arellano and Bond (1991) and generalized by Arellano and Bover (1995) and Blundell and Bond (1998), was used. Arellano and Bond (1991) developed an estimation method that takes account of endogeneity resulting from the inclusion of lags of the dependent variable that arise between these variables and the panel individual effects. The original estimator is sometimes called a difference GMM, and the augmented estimator is sometimes called a system GMM. The consistency of the GMM estimator depends on the assumption that the error term does not exhibit serial correlation and also on the assumed validity of the instruments. To verify these assumptions, several tests proposed by Arellano and Bond (1991) and Arellano and Bover (1995), were used. The first is the Sargan test of over-identifying restrictions, which tests the overall strength of the instruments for a two-step estimator (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond 1998), and the Arellano-Bond tests for autocorrelation AR(1) and AR(2) in first differences in first-differenced errors were also employed. In order to avoid the problem of collinearity of variables, presented in Table A2 in the Appendix, eight separate estimations for two explanatory variables were performed. The lags of the dependent variable were instrumented by their available further lags and other possibly endogenous variables were instrumented also by their available further lags.

The authors also reported the Sargan test results for each model as well as the results of the Arellano-Bond tests (AR(1) and AR(2)) at the bottom of each table. The model seems to fit the panel data reasonably well, illustrated by the fact that the Sargan test shows no evidence of over-identifying restrictions. The equations indicate that negative first-order autocorrelation AR(1) and the second-order autocorrelation are rejected by the test for AR(1) and AR (2) in Tables 3 and 4.

The results of estimations are summarized in Tables 3 (for the comprehensive MLPS) and 4 (for the ROE).

Table 3  
Panel data estimations for MLPS, CEE-11, 2009-2014

Variables	Estimate (1)	Estimate (2)	Estimate (3)	Estimate (4)
MLPS <sub>t-1</sub>	0.501***	0.599***	0.288**	0.405***
Macroeconomic variables				
ΔGDP	0.2508	0.355**	–	–
HHI	–	–	–49.661	98.286
SB	–11.59	2.71	–6.593	–6.421
CR	1.16	0.771*	2.686**	2.508**
Bank-specific variables				
ln_TA	4.93***	3.148**	4.443***	2.498*
SRS	–0.131*	–0.067*	–0.22**	–0.096*
L_D	–	0.044*		0.074**
NeII_NoIOI	–0.027**	–0.021**	–0.021*	–0.021**
S_TA	–0.0525	–	–0.125*	–
LA_DSTF	–0.1049**	–0.156***	–0.073*	–0.137***
Const	–70.71***	–56.95**	–75.026***	–63.885***
Number of observations	86	86	86	86
Number of groups	21	21	21	21
Sargan test	0.8988	0.6447	0.8453	0.7608
AR(1)	0.1267	0.0487	0.2096	0.1043
AR(2)	0.9985	0.9445	0.6955	0.6190

Note: AR(1) – the Arellano-Bond test for AR(1) in first differences, AR(2) – the Arellano-Bond test for AR(2) in first differences. The Sargan test – the test for over-identifying restrictions in the GMM dynamic model estimation. \*\*\*/\*\*/\* indicate significance at the 1, 5, 10% level, respectively.

Source: author's calculations.

Table 4  
Panel data estimations for ROE, CEE 2009-2014

Variables	Estimate (1)	Estimate (2)	Estimate (3)	Estimate (4)
ROE <sub>t-1</sub>	0.427**	0.499***	0.262**	0.449**
Macroeconomic variables				
Δ GDP	0.149	–	–	0.284
HHI	–	–462.455**	–510.005**	–
SB	23.54*	23.6	34.982	–12.587
CR	2.452***	7.795***	3.203*	4.086*
Bank-specific variables				
ln_TA	3.683***	8.165**	6.583***	10.162***
SRS	–0.126**	–0.253*	–0.359***	–0.129*
L_D	0.1***	–	0.017	–
NeII_NoIOI	–0.01*	0.019	0.002	0.001
S_TA	–	0.439**	–	0.582***
LA_DSTF	0.003	–0.17	0.148*	–0.033
Const	–109.169***	–207.538***	131.861***	–207.285***
Number of observations	91	91	91	91
Number of groups	22	22	22	22
Sargan test	0.3825	0.5235	0.4722	0.2840
AR(1)	0.9612	0.2015	0.5429	0.1618
AR(2)	0.2363	0.2402	0.1937	0.2295

Note: AR(1) – the Arellano-Bond test for AR(1) in first differences, AR(2) – the Arellano-Bond test for AR(2) in first differences. The Sargan test – the test for over-identifying restrictions in the GMM dynamic model estimation. \*\*\*/\*\*/\* indicate significance at the 1, 5, 10% level, respectively.

Source: author's calculations.

The estimation results presented in Tables 3 and 4 indicate that reputational score, approximated by the SRS indicator, had a negative impact on a bank's performance, both for ROE and for the MLP Score in each of the eight estimations. Factors with a positive impact on bank performance were the size of bank assets and its financing strategy (L/D ratio). Macroeconomic factors, such as the GDP growth and country credit rating also positively influenced bank performance. As for negative factors, for MLPS (Table 3) liquidity ratio and lack of income diversification (NeII\_NoIOI) are significant. For ROE

(Table 4) market risk is also a significant factor ( $S_{TA}$ ). The findings confirmed the results obtained in some other research papers that the efforts to enhance bank reputation may not have a positive effect on bank performance, but on the contrary, affect it negatively. Thus the empirical results illustrate that for CEE-11 listed banks, large risky banks with a low reputational score were best placed for obtaining best performance results, both in the short-term (ROE) and long-term (MLPS) perspective.

## CONCLUSION

The reputational risk literature and surveys, analysed in the paper, suggested that banks should treat reputational risk as a separate class of risk and analyze it beyond the framework of operational risk and corporate governance. It should not be narrowed down to a 'PR' response to crisis events, but treated as a strategic type of risk, with a strong potential to harm the value of the company.

However, as the reputational literature and many case studies indicate, it is very difficult to categorize and quantify reputational risk, as it can arise as a consequence of other risks and many events. The panel data models for listed banks from CEE-11 countries analysed in the paper, also indicated that the proper management of reputational risk may not be important (and even may be harmful) for the assessment of bank performance. This may explain why many banks dealt with reputational risk mainly in the context of minimizing loss after a scandal, which constitutes crisis management, rather than management of reputational risk.-

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## APPENDIX

Table A1

Summary Statistics for the variables of the model  
This table provides summary statistics (mean, min, max and standard deviation SD)  
for all variables in the model. Data are observed yearly from 2009-2014.

Variables	Number of observations	Mean	SD	Min	Max
ROE	202	-0.4051536	59.40471	-766.265	30.873
MLPS	190	4	9.482928	-23	18
ΔGDP	252	0.5786587	3.266697	-14.814	6.114716
HHI	252	0.0976643	0.0367508	0.0559	0.1943
SB	246	0.9842683	0.1900528	0.61	1.3
CR	252	8.541667	2.190902	5	14
ln_TA	203	15.49538	1.720299	4.836	18.07694
SRS	114	19.32174	187.5545	-13	13
L_D	203	101.7848	47.74582	30	480.78
NeII_NoIOI	230	228.9791	325.5082	-18.61002	4322.222
S_TA	228	19.163	11.513	1.012198	57.35089
LA_DSTF	228	18.182	10.489	2.092	58.26

Source: own calculations on the basis of Bankscope data, World Bank, Eurostat data.

Table A2

Spearman's rank correlation coefficients for all variables in the model

	MLPS	ROE	Δ GDP	HHI	L_D	SB	CR	ln_TA	SRS	NeII_NoIOI	S_TA	LA_DSTF
MLPS	1											
ROE	0.6652*	1										
Δ GDP	0.1182	0.1423	1									
HHI	-0.0698	-0.1892	-0.5302*	1								
L_D	-0.0033	-0.3000*	-0.0927	-0.0127	1							
SB	0.1038	0.0647	-0.2748*	0.1999	0.1784	1						
CR	0.4379*	0.3502*	0.2437	0.0695	-0.2240	-0.0338	1					
ln_TA	0.4729*	0.5337*	0.0444	-0.1619	-0.0105	0.3555*	0.0281	1				
SRS	0.4288*	0.4881*	0.1102	-0.2564*	-0.2277	-0.0711	0.5171*	0.3782*	1			
NeII_NoIOI	0.1605	-0.0671	-0.1984	0.4679*	0.3027*	0.3264*	0.2582*	0.0714	-0.0483	1		
S_TA	-0.0988	0.2784*	0.1381	-0.0573	-0.7382*	-0.1468	0.3289*	0.0073	0.2742*	-0.3038*	1	
LA_DSTF	-0.0394	0.0558	-0.2549*	0.1376	-0.0133	0.1350	-0.3054*	0.1704	-0.1141	-0.0346	-0.0575	1

Note: \* correlation is significant at the 0.05 level.

Source: author's calculations.