

THE EFFECTIVENESS OF CAPITAL MANAGEMENT IN BANKS: EVIDENCE FROM UKRAINIAN FINANCIAL MARKET

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Abstract

The main aim of this paper is to research the methods of defining the integral index of capital banks efficiency on the basis of corporate governance principles. The research identifies the main factors of capital banks efficiency on the basis of corporate governance principles, which give the opportunity to assess the financial performance in the banking sphere. The author suggests taking in integrated all relevant indicators by using the method of distances. In complex this method allows to include absolute points during assessing. The author defined the average range of the integral index of capital efficiency among domestic banks and banks with foreign capital on the basis of corporate governance principles.

Keywords: Corporate Governance, Corporate Governance Principles, Banks Capital, Integral Index, Capital Structure, Method of Distances

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1. Introduction

Investigation of the specificity of capital management in banks has not only quantitative but also qualitative aspect, therefore, it is lead to ranking the banks including these two special features. Thus, at this stage of work, we define the following: if the is lack of indicators, it is theoretically possible to choose among them the most significant and conduct appropriate ranking for its values. If the number of indicators is quite large, they have a different nature, reflecting the different characteristics it will be more difficult to solve the assignment. Moreover, the quality by which it is necessary to ranking or comparison the objects, could not have obvious reflection of selected indicators. In that case there is the aim of constructing generalized (integrated, consolidated) index by which could be possible to conduct the necessary ranking. All these mentioned above illustrate the necessity of constructing integral index of capital banks efficiency.

It is a complex procedure to define the effectiveness of capital management in banks on the basis of corporate governance principles that requires a method of distances. So, let's consider the sequence of steps proposed by the scientific and methodical approach.

As a result, the proposed model provides an adequate comprehensive assessment of the effectiveness of the capital management in banks on the basis of corporate governance principles, without

requiring complex analysis and aggregation of a large number of financial indicators.

2. Literature review

Recently, the research, which is concerning of integrated index, is attracted the attention of many scientists from different scientific fields, and the numerous publications about this. There is such trend because of the wide range of targets which can be solved using such methodology. Due to this we can determine the structure of the objects (Bakanov M.I., 2005), classification of new objects (Verba V.A., 2009), identify the appropriate objects (Grebnev Ye.T., 2002) and the ways out within the current economic situation.

Belov V. (2014) suggests the new methodology of calculation of integral index of stability of financial flows of commercial banks.. Due to the offered method of calculation this economy-mathematical model gives an opportunity to keep track of the change of stability index of all financial flows of commercial bank. The proposed method is simple to build an economic and mathematical model which makes possible to monitor changes in the index of stability of the financial flows of commercial bank. The following indicator can be used to trace the dynamics of change, since it is based on the use of the apparatus of mathematical statistics.

Also methodology of calculation the integral indicators is covered in the following working papers: Grigiryana K.A., who mentioned the settlement

methods of defining the level of banks competitiveness basis on the index indicators; and another scientist Grinev A.V. in his paper discovers the problem of innovative potential as the main tool, basis for increase in economic management efficiency and banks competitiveness. Due to the following method of evaluation the innovation potential of the banks based on the synthesis of different approaches including integral indicators. The evaluation indexes have to contain important elements and therefore a certain sequence of evaluation procedures should be kept to.

Foreign scholars also pay great attention to capital management in banks, for example Philippe Jorion (1999) in his paper draws lessons from risk management practice. It was mentioned that Long-Term capital Management had underestimated its risk due to its reliance on short-term history and risk concentration. As a result it serves to illustrate the weaknesses in its risk management system.

A.Sinan Cebenoyan and Philip E.Strahan (2001) examined risk management, capital structure and lending in banks. In their exploration it was made the test how active management of bank credit risk exposure through the loan sales market affected capital structure, lending, profits, and risk. Therefore sophisticated risk management in banking is likely to improve the availability of bank credit but not to reduce bank risk.

It's not really surprisingly that Corporate governance has a great impact on banks performance, and it is component of effective capital management in banks. Thus Andrea Beltratti and Rene M. Stulz (2009) evaluated the importance of factors that have an influence to the poor performance of banks during the credit crisis. They examined whether bank performance is related to bank-level governance, country-level governance, country-level regulation, and bank balance sheet and profitability characteristics before the crisis. As the result banks with more loans and more liquid assets performed better and so did banks from countries with stronger capital supervision and more restrictions on bank activities.

Frankly speaking, the last review of the Basel III gives the new challenges in banks capital. Arturo Estrella, Sangkyun Park and Stavros Peristiani (2000) discovered the effectiveness of three capital ratios - the first based on leverage, the second on gross revenues, and the third on risk-weighted assets. The last one proved to be more accurate in predicting bank failure over longer horizons, but the simple ratios could function as useful supplementary indicators of capital adequacy.

Christian T.Brownless and Robert F.Engle (2015) introduced the SRISK index which associates systemic risk to the capital shortfall a financial institution. The sum of SRISK across all banks is used to measure the degree of undercapitalization of the

whole financial system. After conducting the study basis on analysis the systemic risk of top US financial firms between January 2005 and December 2012, the results have showed that their methodology provides useful rankings of systemically risky firms at various stages of the crisis.

Another index was built by Liang Peng (2001). He investigated two innovative techniques, a re-weighting procedure and a method of moment repeat sales regression. Building a venture capital index gives the following result - the venture capital industry experienced dramatic growth in the sample periods, in terms of capital flows, the number of financing rounds and venture-backed firms, and the net asset value of the index.

Other reseachers like Arzamasov V. and Henry Penikas (2014) proposed the index that can built for various countries at the same time and the quantitative measures are being introduced to select the best model by comparing the behavior of different models with the benchmark.

The current diversity of appropriate methods significantly complicates the selection of research method in a particular case. The classifications of methods are often chaotic and do not correspond the basic requirements of making classifications. Therefore, all scientific investigations about choosing and rationalization of the research method of qualitative categories require to systematize and structuring.

3. Methodology

In general there are the methods of complex group assessment, generalized and index indicators. They include the following:

- drafting the values of all parameters. This method is used in the case of identical direction output indicators and their overall comparability. The best indicator for the considered method is the one in which there is the maximum sum of stimulator indicators or there is minimum amount of destimulator indicators;

- the method of amounts. The indicators are ranked by the stimulator indicators in order of increasing and by the destimulator indicators in order of decreasing. In the case of equality the same places are assigned to indicators. The highest level of this method has the is in the index with a minimum amount;

- the method of total points. In addition to output data, it is need to assess the scale of each indicator. This method requires the development of a large number Bar Chart assessments and coordination with each other. Thus, the methods of amounts and total points do not consider the absolute values therefore sometimes it leads to disfigurement of the calculation if the variations of these parameters differ slightly;

- method of distances takes into account the absolute values of the assessment. In the constructed matrix of indicators it is need to determine the best value, which will be taken as the standard. The next step is calculation the distance between the levels of performance. Indicators are ranked in order of increasing distance - the smaller is the distance, the better is the rating;

- index method based on relative dynamics indices and dimensional comparisons of individual criteria [1].

Based on the mathematical methods above, in contemporary practice of assessment it is actively used calculating, matrix and graphical methods. And now let's observe some of them:

- Rosenberg model: consumers evaluate the phenomenon in terms of suitability to satisfy their needs. According to this model subjective suitability index was estimated as summing subjective assessments of life index to satisfy different motivations. The algorithm of creating Rosenberg models by specific value can be represented as: forming a complete list of attributes. It is necessary to form the most comprehensive list of options. For this it is need to conduct non formalized surveys, focus groups, interviews with experts or brainstorming sessions with experts. All received options are combined into groups (as needed) and formalized; ranking attributes. It is necessary to understand what is the most important criteria, and what plays a secondary role. For this purpose, it is need to conduct the interviews with experts. Next, calculate the importance of each parameter. Rejected less important; measurement satisfaction for a given attribute. So, at first – we create feedback forms and conducted a survey on a 5-point or 10-point or in any other scale; the second- we estimate overall level indicator and compared with the perfect score. Rosenberg model is based on the assumption that every characteristic is desirable and at the same time, the higher is the score, the better it is. Criticism of the item led to the creation of models with ideal point;

- models with ideal point. Peculiarity: the introduction of an additional component – ideal value of index characteristics. At the same time, we should give preference to one indicator from another, in the case when it's the lowest distance from the ideal point. An advantage of this method is providing insight of the perfect indicator; also It can determine the degree of deviation from the ideal parameters. Disadvantages - the difficulty in determining the characteristics of the ideal indicator; use expert assessments;

- Grebnev describes these stages for calculating the integral index: developed a set of quality indicators based on market knowledge and performance requirements; select from this set the

main, call them quality parameters; obtain quantitative characteristics of significance for each parameter by interviewing experts; formulate a model with the standard item in terms of selected parameters by setting its quantitative evaluation; develop quantitative estimates of the same parameters by their performance and in terms of competing; evaluate the integral quality level. This methodology has been widely well-known, both in academic circles and in the practical field. It has a number of specific practical advantages, like, the fact that it allows you to combine quantitative measurement and scoring features, also it is easy to use and based on the publicly available data.

So our challenge is to define the integral index of capital efficiency in banks on the basis of the corporate governance principles.

3.1 Model description

Stage 1

Selection the main components, by means of which to evaluate the banks performance characteristics and corporate governance principle that is related to the capital management in banks:

- capital adequacy,
- capital quality,
- profitability,
- capital efficiency,
- dynamics,
- Risk management,
- Shareholders,
- Disclosure and Transparency,
- Stakeholders,
- Board of directors.

These factors comprehensively to assess the financial performance and characterize the correlation between capital management and corporate governance principles. Due to this, it was estimated divergence between separate criterion and real level of indicator which could be negative (0 points), neutral (1 point) and positive (2 points).

The absolute values of groups "risk management", "Shareholders", " Disclosure and Transparency", "Stakeholders", "Board of directors" determined without comparison with similar averages of banking system.

If the majority of management indicators reach optimal values, the absolute value of this level will be 2 points (1 point - when most of the indicators are related to the category of "medium", 0 points - the category of "marginal").

Stage 2

The weight coefficients determined by ranking using pairwise comparison is represented on Table 1.

Table 1. Determination of weight coefficients

Factor	Capital adequacy	Capital quality	Profitability	Capital efficiency	Dynamics	Risk management	Shareholders	Disclosure and Transparency	Stakeholders	Board of directors	Σ	weight
Capital adequacy		1	1	0	1	1	0	1	1	1	7	0,156
Capital quality	0		1	1	1	0	1	1	0	0	5	0,111
Profitability	0	0		1	1	1	1	1	1	1	7	0,156
Capital efficiency	1	0	0		1	0	1	0	1	1	5	0,111
Dynamics	0	0	0	0		1	1	1	1	0	4	0,089
Risk management	0	1	0	1	0		1	1	1	1	6	0,133
Shareholders	1	0	0	0	0	0		1	1	0	3	0,067
Disclosure and Transparency	0	0	0	1	0	0	0		1	1	3	0,067
Stakeholders	0	1	0	0	0	0	0	0		1	2	0,044
Board of directors	0	1	0	0	1	0	1	0	0		3	0,067
											45	1,000

So, according to the following method, we evaluate each indicator to the following scale: 0 – the variable in the column has an advantage over the variable in this line; 1 – the variable in the line has an advantage over the variable in the column. The rank of the index is determined by the sum of the numbers in the line and the variables of the highest ranks have a greater sum of numbers.

Stage 3

In this stage we propose to build value of all indicators in integrated using the method of distances:

$$P_i = \sum_{i=1}^n (1 - \delta_i) \cdot B_i \tag{1}$$

where n – number of variables;
 B_i – weight of the *i* variable
 i – relative rating of the *i* variable.

The estimate is calculated by the following rules:

$$\delta_{ij} = \frac{P_{ij}}{P_{\max}} \tag{2}$$

In case of the preference to the larger values,

$$\delta_{ij} = \frac{P_{\min}}{P_{ij}} \tag{3}$$

In case when the lower value is the best,
 where P_i – value of *i* variable;

P_{min} – the lowest value of variable among all quantity of the banks;

P_{max} – the highest value of variable among all quantity of the banks

After this, we deduct the average value of the integral index (P_{imed}) and set the range of the medium:

$$0,7 \cdot P_{imed} \leq P_{(med)} \leq 1,3 \cdot P_{imed} \tag{4}$$

We can assess the efficiency of capital management in banks by the deviation degree between real and medium value (table 2).

The banks were elected by the presence of foreign capital in Ukrainian banks.

Thus, there are 5 banks with foreign capital and 25 Ukrainian banks which are represented on Table 2.

Table 2. Determination of integral index of capital management in banks on the basis of corporate

governance principles

Bank	Capital adequacy	Capital quality	Profitability	Capital efficiency	Dynamics	Risk management	Shareholders	Disclosure and Transparency	Stakeholders	Board of directors	Integral index
DIAMANTBANK	1	1	1	1	0,5	1	1	1	1	1	0,045
UKRSIBBANK	1	0,5	1	1	1	1	1	1	1	1	0,056
CREDIT-AGRICOLE	1	0,5	1	1	1	1	1	1	1	1	0,056
UNICREDIT BANK	1	0,5	1	1	1	1	1	1	1	1	0,056
RAIFFEISEN BANK AVAL	1	1	1	1	0,5	1	1	0,5	1	1	0,078
MEGABANK	1	1	1	1	0,5	1	1	1	0,5	0,5	0,100
PLATINUM BANK	1	0,5	1	1	1	1	1	0,5	1	0,5	0,123
ZLATOBANK	1	1	1	0,5	0,5	1	1	0,5	1	1	0,134
UKRINBANK	1	1	0,5	1	0,5	1	0,5	1	1	1	0,156
UNIVERSAL BANK	1	0,5	1	1	0,5	1	0,5	0,5	1	1	0,167
BANK CREDIT DNEPR	1	1	1	0,5	0,5	1	0,5	0,5	1	0,5	0,201
PRIVATBANK	1	0,5	1	0,5	1	0,5	1	0,5	1	0,5	0,245
SBERBANK	1	1	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,289
ALFABANK	1	1	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,289
VTB BANK	1	1	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,289
PREMIUM BANK	0,5	1	1	1	0,5	0,5	0,5	0,5	0,5	0,5	0,312
UKREXIMBANK	0,5	1	0,5	1	0,5	1	0,5	0,5	0,5	0,5	0,323
DELTA BANK	0,5	0,5	0,5	1	0,5	0,5	1	1	0,5	1	0,345
CREDIT EUROPA BANK	0,5	0,5	0,5	1	0,5	1	0,5	1	0,5	0,5	0,345
KHRESCHATYK BANK	0,5	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,445
KYIVSKA RUS BANK	0,5	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,445
RODOVID BANK	0,5	1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,445
FINROST BANK	0,5	0,5	0,5	0,5	1	0,5	0,5	0,5	0,5	0,5	0,456
OSCHADNY BANK	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
PROMINVESTBANK	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
BANK FINANCE AND CREDIT	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
IMEXBANK	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
CITIBANK	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
CREDOBANK	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,501
GOLDEN GATE BANK	0,5	0,5	0,5	0	0,5	0,5	0,5	0,5	0,5	0,5	0,556

The range of the medium according to (4) is the following:

$$0,209 \leq 0,298 \leq 0,387.$$

Thus, based on the results of Table 2 it can be argued that, the integral index of capital management in banks on the basis of corporate governance principles can be less than the average, be within the average, to go beyond the average. Thus, in the second and third cases, the capital management in banks can be characterized as effective. As we can see from the research, the presence of foreign capital in banks does not mean about the perfect control and management system, so all banks should improve their performance, providing effective capital management system, which can be confirmed by the results of our investigation.

5. Conclusions

Finally, we should outline that banking activities among the countries is fully complicated because of different size of banks capital, assets, IT, capital management and economy at the whole. All banks implement different strategies to overcome losses after crises and finally be responding to new Basel III capital standards, other institutions choose model that

can help to attract more capital and clients. Nowadays it is necessary to have an integral model in banks that should include corporate governance and management, which help to achieve positive indicators and avoid losses.

To sum up, it can be mentioned that the proposed scientific and methodical approach to assessing the impact of corporate governance principles on the capital management in banks can be made of using the integral index and the method of distances. The future prospect for the next research in the following direction is a graphical interpretation of the test.

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