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## EFFECTIVENESS OF BANKING: EVALUATION AND MEASURING

ВЕТРОВА ТАТЬЯНА НИКОЛАЕВНА

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The purpose of the research is the substantiation of the theoretical and methodological foundations of approaches and standards for evaluating the efficiency of a commercial bank based on the application of modern methods and the development of practical recommendations for improving evaluation procedures, taking into account the specific working conditions of credit institutions. The methodological basis of the research is the methodology of scientific knowledge, in particular the methods of system and comparative analysis, the methods of scientific abstraction, generalization, comparison, grouping, formalization, historical and logical analysis of theoretical and practical material. The study of various options for interpreting the efficiency of banking activities and the analysis of concepts existing in foreign and domestic scientific literature reflecting views on this category allowed the author to identify the shortcomings of modern approaches to determining the essence of the efficiency of a commercial bank. As a result of this research, the goals and objectives set at the beginning of the work were achieved. The results of the work confirm the multifacetedness and complexity of the existing issues and problems related to the efficiency of banking activity and its evaluation. The work is of practical importance and can be used within the framework of the discipline «banks and banking». The originality of the settlement lies in the author's approach to understanding the effectiveness of banking.

*Ключевые слова:* commercial banks, efficiency, measuring, technical efficiency, allocative efficiency

### INTRODUCTION

In this note turn to the estimation of the banking efficiency. Nowadays the role of banks is high important, they occupy leading position in the modern economic world. Banks are the ones of the greatest agencies of commerce. Thus the sound banking industry is extremely necessary to develop trade and industry, and it is very helpful to the economic activity and industrial progress of a country. However the banking sector has faced numerous challenges in the past decade. In this situation the efficiency of commercial banks and its measuring and evaluation became a highly significant part of analysis of bank performance.

In the light of that the topic of my research paper seems very important to elaborate. Thus this study focuses on the theoretical issues of the bank efficiency. For this purpose I attempt to find the answer to the following question:

- What is efficiency?
- Which bank should be treated as effective?
- What is main factor of effectiveness banking?
- Methodology. How to evaluate the effectiveness of banks?
- How to improve is the bank efficiency?

The study is organized as follows: section 2 answers the question why do we care about the efficiency

of commercial banks; section 3 overviews the empirical literature on bank as well as bank efficiency; finally, section 4 says about measuring commercial bank efficiency. The paper also includes introduction, conclusions and the list of literature.

### MAIN PART

Efficient and effective utilization of resources are the key purpose of every banker. «Today, banks exist in one of the most competitive environments in all of business. Keeping customers, attracting new ones, delivering new products, providing consistent customer-centric services through multiple channels while meeting regulatory requirements is more difficult than ever» [1]. Furthermore increasing competition from nonbank institutions, technological innovation, and banking consolidation is putting strong pressure on banks to improve their performance. Therefore obviously banks will be more competitive and hence successful in maintaining their business if they operate efficiently.

But this is not the point of only competition. Recent years have been marked by a shift in the basic attitude of the owners, managers of the banks and regulator as well from the maximizing outputs as a main factor of effectiveness to the complex comprehensive evaluation of the banks' activities. Why did it happen? The growing complexity of banks' industry, rapid changes in the

external environment, as a result the appearance of new risks made it tough and complicated to monitor and forecast the situation not only on the microlevel but also on the macrolevel. «The banking industry is very sensitive to macroeconomic conditions» [2]. The recent financial crisis of 2007-2008 which is considered by many economists the worst financial crisis since the Great Depression of the 1930s, helped to bring greater emphasis to banking efficiency by showing us the unsoundness of banking industry. Because nothing could help to forestall the Global Financial Crisis and subsequently fight against the consequences of it: internal regulation, regulatory requirements, instructions of the Committee on Banking Supervision of the Bank for International Settlements (Basel I, II and even III), credit rating agency and their evaluation.

Let's do not forget that banks play unique and high important role in any economy, because of influence on welfare of each economic agent they have. Improvements of the banks' efficiency are not only giving banks but also others financial institutions opportunities to dramatically raise their productivity and this in its turn improves the standard of living. The importance of financing role of the banking sector in the economy can be illustrated by the following examples: narrowing net interest margin enhances investment activity and stimulates economic growth; «furthermore, it also contributes to an increase in consumer surplus, as lower credit rates entail a decreasing debt service burden and higher deposit rates trigger rising financial wealth» [3].

Talking about bank efficiency the first things that should be done is defining bank institution in a modern economy and its main functions. Besides there is still no consensus as to the way how define the efficiency in the economic world. Without those steps it is impossible to determine whether banks operate efficiently or not.

So begin from the beginning. A commercial bank is a profit-seeking financial institution, which dealing in money. The specific characteristic of banking is that bank is allowed to accept deposits of money from the public to keep them in its custody for safety. At the same time, bank can create credit by making advances out of the funds received as deposits to needy people or firms. Therefore banks mobilize of saving in the economy and facilitate to redistribute flow these savings, the idle surplus money of households and from which loans are given on interest to organizations, businessmen or others people who need them for productive, investment or personal uses.

The term «bank» has been defined by economists in different ways. A few of these are:

- «According to Walter Leaf «A bank is a person or corporation which holds itself out to receive from the public, deposits payable on demand by cheque»;

- According to Horace White, «A bank is a manufacture of credit and a machine for facilitating exchange»;

- According to Prof. Kinley, «A bank is an establishment which makes to individuals such advances of money as may be required and safely made, and to which individuals entrust money when it is not required by them for use» [4].

We prefer to define bank as a financial institution (organization) which deals in debts and credits and thus bridges the gap between the savers and borrowers by means of specific types of activity which include: accepting deposits, lending money, creating money.

Sometimes efficiency is defined as ability to achieve a goal by working towards set targets, then it is reasonable to describe banks' functions. The modern banks perform a variety of functions. The main functions of commercial banks are divided into two groups: primary functions and secondary functions (see Scheme 1).

Relatively new function which banks ought to perform is fulfillment of socio-economic objectives. According to our opinion this is the most important emphasis in overall bank's business model for both developed and developing countries. Banks are the blood system of the economy and it is plain to see that every country needs socially-responsible banking because only in this case banks can actually help to capital formation in the country and hence «to develop trade and industry in the country by encouraging habits of thrift and saving and lending money to business and people» [6].

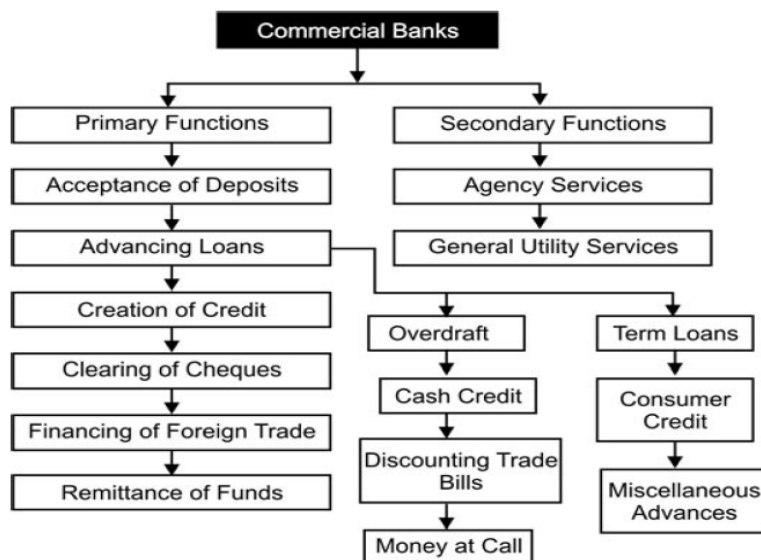
The governance and society eventually have comprehended the importance of socio-economic objectives of banking and over the last decade commercial banks have been called upon to help achieve certain goals laid down by the state. «Banking is, thus, being used to observe the national policy objectives of reducing inequalities of income and wealth, removal of poverty and elimination of unemployment in the country. In the modern world, banks are to be considered not merely as dealers in money but also the leaders in economic development» [7].

So nowadays the banking efficiency should be evaluated in close correlation between the fulfillment of economic and social objectives.

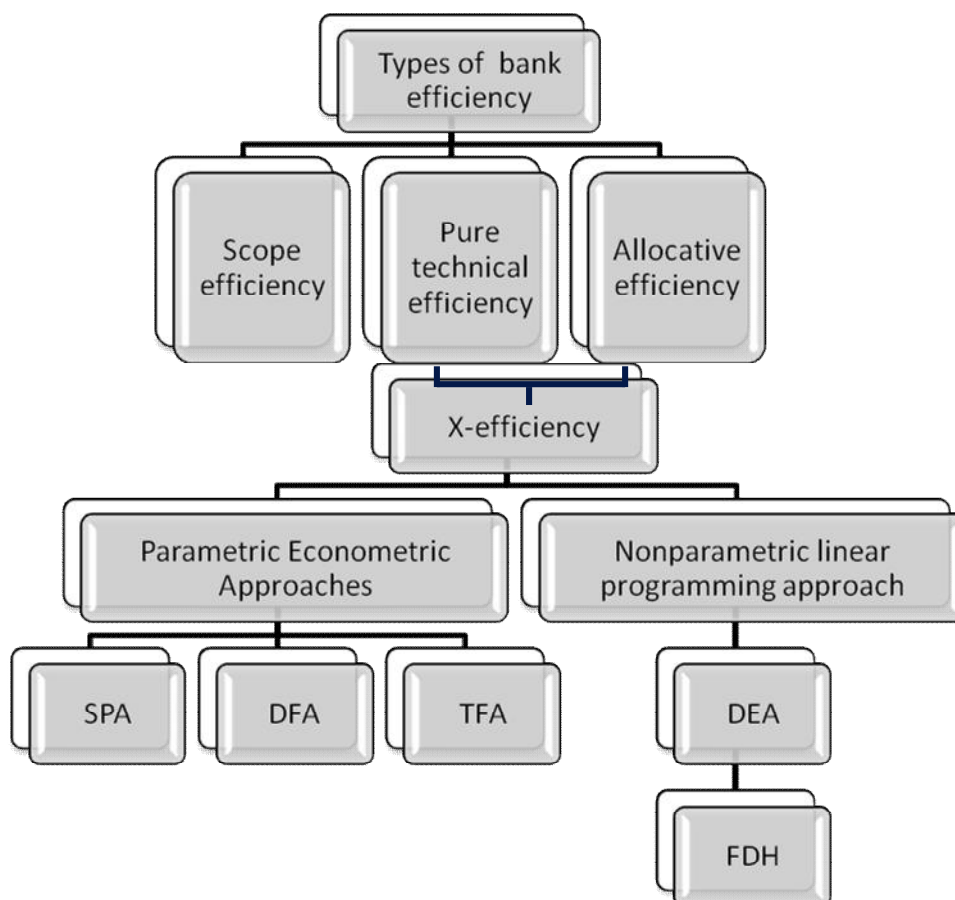
The first efficiency research was made in relation to the various industrial sectors of the real economy according to the institutional approach of corporate microeconomics. The premier attempt to estimate efficiency was made by famous economist Farrell. In 1957 he proposed to select efficient production units in order to create the «efficient production frontier». This method was first applied by Charnes in 1978, he used linear programming techniques.

But in recent years the focus of efficiency research has shifted to the financial sector with an emphasis on researching the efficiency of commercial banks.

According to modern economic studies the overall bank efficiency can be decomposed into several following types (see schema 2):



**Scheme 1.** General Banking functions of the commercial banks [5]



**Schema 2.** Measurements on bank efficiency

Efficiency of scale means the proportional increasing volume of issue which accompanies by less than proportional increase in costs. Accordingly, the bank will be considered ineffective in terms of scale, if the proportional increase in output resulting in a more than proportional increase in costs.

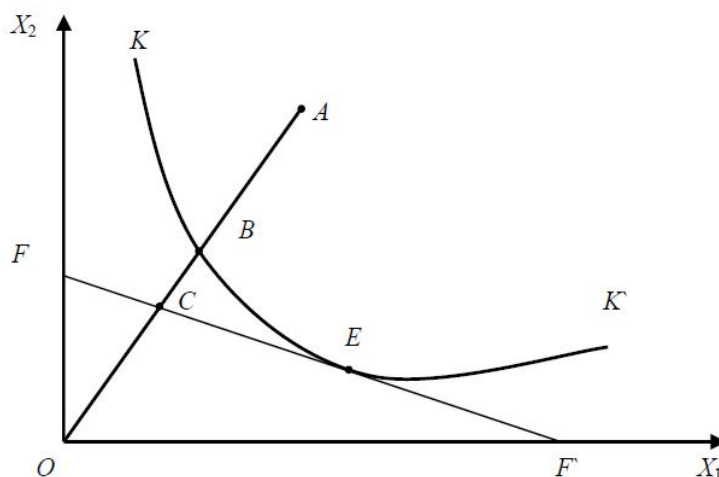
Scope efficiency means the correlation between costs and selected product line of a bank. This is achieved in case of more effective (the cheapest one) way of production creation of a given set of banking products in a certain combination than if they produced individually or by means of services of outside specialized organizations.

A bank is considered technically effective as long as it manages to maximize the volume of output using the given level of resources. A bank is considered

technically effective as long as it manages to maximize the volume of output using the given level of resources. There are two ways to achieve technical efficiency: either by increasing outputs or by the reduction of inputs. Technical efficiency is the major method that the most of studies employ to measure bank efficiency.

«Allocative efficiency happens when the bank chooses the revenue maximizing mix of outputs. Theoretically, a bank is fully efficient if it produces the output level and mix that maximize profits and minimize possible costs. However, in reality, most banks are not fully efficient» [8].

Both technical efficiency and allocative efficiency can be illustrated by graph 1.



Graph 1. Technical efficiency and allocative efficiency of banking

Consider the graph 1. Starting with the technical efficiency:

- $X_1, X_2$  – two types of resources which the bank uses to produce one product ( $Y$ );
- $KK'$  – all the possible combinations of resources giving the same amount of the revenue;
- Point B – the optimal level of using of the bank's resources;
- Point A – current situation;
- Segment BA – excess costs;

Then the technical efficiency (TE) of banking is measured this way (see formula 1):

$$TE = \frac{OB}{OA} \quad (1)$$

It is easy to guess that this ratio can be from 0 to 1. The closer to zero TE-coefficient, the greater the volume of redundant resources which bank uses (tech-

nical inefficiency). «1» indicates that the bank is completely technically efficient.

Now let's focus on the allocative efficiency:

- $FF'$  – the possible combinations of economic resources which is characterized by some the same total cost.

Then if we know the ratio of the prices of inputs, the bank's allocative efficiency (AE) can be calculated through the following relation (see formula 2):

$$AE = \frac{OC}{OB} \quad (2)$$

In this particular case, the most reasonable thing is to get point E which is corresponded to both technical and allocative efficiency.

In 1966 Harvey Leibenstein proposed a new kind of efficiency so-called «X - efficiency», which have to

help to evaluate how effectively the bank uses its resources to create a banking product.

«X-efficiency is defined as the ratio of the minimum costs that could have been expended to produce a given output bundle to the actual costs expended» [7], hence X-efficiency varies between 0 and 100 percent. X-efficiency includes both technical efficiency and allocative efficiency.

The difference between parametric econometric approaches and nonparametric linear programming approach is simple – they are based on the parametric and non-parametric approaches. In the first case the financial performance of the bank, which is leader of the banking industry, is used as a reference (the best result); the second one assumes that the best result is unachievable and does not exist.

In our opinion, in the modern economic situation, which is characterized by the high level of competition and comprehensive crisis phenomena, the role of X-efficiency will increase more and more.

Analysis of various information sources led us to the conclusion that the main reasons of an X-inefficiency of commercial banks include:

- low level of bank management;
- inefficient using of employees' potential, their insufficient qualification;
- discrepancy between information systems, technological infrastructure and requirements of business;
- losses because of low-quality servicing clients;
- losses owing to non-optimal technological chains.

Bank executives of financial institutions planning to survive and even thrive in today's unpredictable economy have to find new ways in order to improve efficiency. According to the FIST<sup>TM</sup>'s research there are several actions that should be taken:

1. Rationalize branches and optimize delivery channels;
2. Initiate business process improvements aligned with enabling technologies;
3. Align sales resources with market opportunities;
4. Evaluate strategic sourcing opportunities;
5. Evaluate selective outsourcing alternatives.

### CONCLUSION

The research considered the key issues of banking efficiency: definitions of the main terms, measuring bank efficiency, the way of improvement it. But they are only the possible measures of management and improvement efficiency of commercial banks, because nobody knows the real factors of efficiency and even what «efficiency» means exactly. The measuring of the bank efficiency is complicated by the myriad of

different services that commercial banks perform and hence a lot of function they fulfill. Researchers deal with complex issues in measuring bank production and multitudes of data. That is why it is not surprising that estimating of «commercial bank efficiency varies considerably across studies that use different techniques, conceptions of bank production and data samples» [9].

This situation reminds me of Indian parable about the six blind men and the elephant: the first blind man reached out and touched the side of the huge animal. «The elephant», he said, «is nothing but a wall». The second man felt the elephant's trunk. «The elephant», he concluded, «is most likely related to the snake family». The third blind man, grabbed hold of the elephant's tail and decided the elephant was like a piece of rope.

Similarly every approach to the definition and measurement of bank efficiency is based on their own assumption and hence obtains different results. But «despite the differences in mean measured efficiency across the different conceptions of how banks operate, however, there is some similarity in the rankings of efficiency scores of individual banks».

We still cannot say that they know everything about bank efficiency, all of banks work as efficiently as possible to perform socio-economic objectives and the next crisis does not threaten economy. That is not true, of course. Economists have just made the first step towards comprehend the nature of efficiency and further research has to determine how sensitive these findings are to the particular dataset and estimation techniques or propose some new way of approach.

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