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## **CREDIT BUREAU BENCHMARKING AS A TOOL FOR ESTIMATION OF BANK'S POSITION AT THE MARKET**

*The article presents the conception of benchmarking on the market of consumer loans. The essence of such benchmarking is comparative analysis of bank's activity parameters with market average values from bureau of credit histories. Such benchmarking using is considering as a tool for estimation of bank's market position.*

**Keywords:** benchmarking; bureau of credit histories; competitiveness; banks crediting; market of consumer loans.

### **The problem statement.**

Consumer lending, originating from the time of ancient Greece, gained significant development in the second half of the XX century. This is due, primarily, to the end of the Second World War, after which the gap between production and consumption demanded the creation of a mechanism to stimulate demand by the population and the rapid development of computer and information technologies. Banks have played the important role in this segment through high resource potential and opportunities in technology development lending. This segment differs from others by mass character of loan granting, standardized credit products, scoring tool for estimation of creditworthiness and risk of the borrowers. As addition, this segment is characterized by relatively high profitability and dynamic changing of the market opportunities.

Today the product range of consumer crediting includes mortgage, car loans, unsecured loans, express loans in stores, credit cards and more. During the global financial crisis of 2007-2008, the most dynamic segment of lending was mortgage. It was due to the presence of "long" money and their relatively cheap price. After the financial crisis lending segment shifted to unsecured consumer loans. The development of information technology is also constantly stimulates the development of the credit card segment.

Dynamic development of bank consumer crediting can be observed in Eastern and Central Europe. With the transition from a command to market system began to develop the banking sector. At the beginning of XXI century these countries experienced a boom in consumer lending. For example, quarterly growth in lending to households in Poland, Russia and Hungary for the period 2007-2008 years was 20-80% [1], [2], [3].

The consumer crediting had dynamically developing in Ukraine over the past 10 years. Dynamics included several stages. At the first stage, which began in 2004-2005 and continued until the 2008 financial crisis, banks are actively issued mortgages, car loans and loans for the purchase of home appliances. Moreover, a significant portion of mortgages and car loans issued in foreign currency (dominantly in USA dollars). The share of consumer loans in the structure of the total bank's loan portfolio amounted to about one-third. At the stage of the financial crisis, consumer credit stood still, and the post-crisis stage began to emerge with significant changes in the structure of banks supply. Specifically, since 2010, banks began to actively promote the market in unsecured no-purpose loans and credit cards. In mid-2013 formed sufficiently rich offerings of consumer loans proposition. Approximately 50 banks are offering different proposition. The average monthly amount of lending to households from July 2012 to July 2013 was 8.5 billion [4]. At the same time, the share of loans to individuals in the structure of the total bank's loan portfolio has fallen to one-fifth and not growing, which is a consequence of focusing on the issuance of short-term loans.

Political turbulence impacted to the consumer lending in Ukraine at the first half of 2014. The focus was concentrated to revision the strategies of consumer lending development and reallocation capital for credit granting between regions.

So, we can see that credit market opportunities, resource support lending, profitability of different credit products dynamically changing in the last 10 year. These changes we observe as at the world market as in Ukrainian market of the consumer crediting.

Based on abovementioned, the banks in the consumer lending market face the challenge of qualitative competitive analysis for the development and implementation of optimal development strategy. That would allow them to take and hold (or expand) their own niche in this segment. For the development of optimal strategies in such competitive environment, banks have used a variety of methods and approaches. One such method is method of benchmarking, which originated in the 1970s in the United States, constantly improved, and today is a powerful tool of competitive advantage [5]. The problem which is analyzed in this article is to use potential of bureau of credit histories for creation benchmarking methodologies. These methodologies provide banks by good instrument for improving their market position and construct adequate strategies for competitiveness.

### **Analysis of recent researches and publications.**

Benchmarking is recognised as an effective tool for permanent improvement of quality of different objects or processes. Since its origin in the middle of 1970-th there were published a lot of papers which covered different questions of its essence and applications in different spheres. Reviews of literature on benchmarking have been done in some special articles such [6] and [7].

From the current point of view all publications devoted to benchmarking can be divided for convenience into three groups. First group includes papers devoted to general aspects of concept of benchmarking and fundamentals of benchmarking using. May be paper [8] is a good overview for this. Second group is devoted to specific applications of benchmarking and case studies in different fields. It is reasonable to point out article [9]. Finally, the third group describes innovation techniques of benchmarking using [6].

There are a lot of literature devoted to different questions of bureau of credit histories functioning and applications of bureau information. Original paper [10] by David Birch presents approach of using the information from the private credit bureau Dun's Market Identifiers (DMI) to identify the impact of moving companies from one state to another for employment in the U.S. The article [11] presents overview of credit bureau in European countries. In [12] authors analyze the bureau development in Ukraine. The ideas about using benchmarking concept based on information from bureau are presented in [13].

### **Methodology.**

Benchmarking is the term formed from word "Benchmark" which means "basis for comparison". In management and marketing benchmarking is the process (proce-

dure) comparison of the company with the best analogs on the market or industry. The aim of benchmarking is to initiate changes for improving competitiveness and performance. First benchmarking as a method of analysis was generated in 1972. The U.S. research and consulting company PIMS proposed an approach to finding effective solutions in a competitive environment, based on the knowledge and use of best practices of similar companies in similar circumstances. American company "Xerox" successfully used benchmarking to analyze the costs and quality of their products in comparison with Japanese counterparts. After that benchmarking had quickly become one of the most effective methods of competitive analysis. Today benchmarking as a method of analysis of competitiveness improves business performance, gives early warning signals about the lag, the level of performance compared with the best models in the industry, reduces the cost of developing a competitive advantage.

We offer to use the potential of bureau of credit histories for developing and implementing benchmarking on the consumer lending market. There are a lot of advantages in this approach which are presented below.

Bureau of credit histories are the credit market infrastructure institutions that accumulate information about credit histories and provide their exchanges. The bureaus are multifunctional institutions. The main functions of the bureau in modern credit markets are:

- *Reduce the cost of collecting and analyzing information.* If the institution of bureau of credit histories is absent on the market the creditors should spend a lot of effort to search for information about borrowers from different sources. When the market has a system of credit bureaus, the creditor immediately receives the necessary information.

- *Reduce the risk of information asymmetry.* This risk is present because the lender and borrower are in different information situations. Bureaus of credit histories reduce the risk of the lender by means of providing information about borrower. Borrowers with negative history are rejected and borrowers with positive history can obtain better conditions for borrowing.

- *Reducing the moral hazard of the borrower.* Availability of credit bureau encourages the borrower to fulfill credit obligations more responsibly. Otherwise, the borrower will be limited access to credit granted through the display of negative information in credit bureau.

In general, banks in conjunction with the credit bureau can significantly improve risk management and improve the process of making credit decisions.

Bureau of credit histories collect and store the information about credit transactions in the market. The presence of huge volume of data can serve as a basis for benchmarking. In various countries functioning of credit bureau organized differently. It may be one bureau on the market. It may be many bureaus which are competitors. State may be directly involved in organizing the bureau, and can act only as regulator of office, which are private institutions. The collection of information may be required, or may be voluntary.

For example, in Ukraine the credit bureau system is developed as a set of private institutions. The state acts only as market regulator. Transmission of credit information from banks to bureau is not mandatory, but the National Bank of Ukraine encourages banks to pass information to the bureau through regulations of reserves. In Ukraine, the credit bureaus operating through 2005 after the adoption of the Law of Ukraine "On organization of formation and circu-

lation of credit histories". There are 9 bureaus included in State register in Ukraine (as of April 2014). The largest in terms of data among which are the following three:

- Ukrainian bureau of credit histories (UBCH);
- First credit bureau of Ukraine (FCBU);
- International bureau of credit histories (IBCH).

Information taken from the official websites of these bureaus as of the first quarter of 2014, indicating that UBKI has amount of 35 million credit histories. IBCH and FCBU have above 16 million each. Almost all large banks engaged in consumer lending transmit information into bureau's databases. According to the author investigation, 96% of the borrowers inflow in early 2014 had a credit history of at least one of these three bureaus.

The amount of data accumulated in the credit bureaus usually are representative samples of market data. For example, the amount of data in any of these three Ukrainian bureau of credit histories, is sufficient for the evaluation of various market indicators. Therefore, they can realize the concept of benchmarking model developed in this article and is presented below.

The author believes that the benefits of using bureaus data for benchmarking are that the data consist of real statistical market information which updated regularly. It is important also that the performance can be calculated delay in payments and credit risk across the market. Such information is usually not disclosed by individual banks. Also benchmarking can explore the figures for individual products, market segments and regions.

#### **The goal of the article.**

The purpose of this article is to present the design of benchmarking on the market of consumer bank lending. A distinctive feature of the proposed benchmarking is to use information from bureau of credit histories. The advantages of this type of benchmarking and its implementation on the Ukrainian market of consumer lending are considered.

#### **Results.**

Model of bureau's benchmarking based on the data presented in the bureau. The proposed model based on the structure of the information that is reflected in the bureau under the Ukrainian legislation. Given that the Ukrainian legislation bureau was developed taking into account the international experience, the conceptual model does not significantly vary from other markets.

The information contained in the bureau may be structured in the following content blocks:

- information about identification of borrower;
- information about liabilities of borrower (loan products, their types, number of open and closed loans, parameters of loans, etc.);
- information about the borrowers from public registers and other public use databases;
- information about operations with credit histories (number of requests for stories during different intervals).

On the basis of these data and information it is possible to form the set of indicators for benchmarking model. Indicators can be grouped into 4 blocks as presented at the picture on Picture 1. Each block contains a lot of indicators. That gives the possibility to compare average market values with values of these indicators for individual creditors.

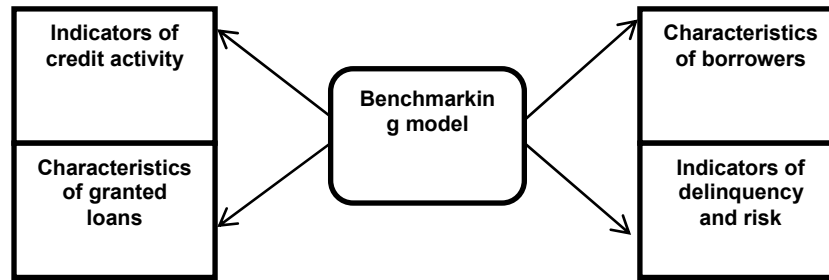


Fig. 1. The benchmarking model based on bureau of credit histories information

Source: composed by authors' calculations

The description of block's constituents is following.

**Block "Indicators of credit activity".**

Following indicators may be included:

- 1) monthly or quarterly growth/declining rate of queries to the bureau for all credit products;
- 2) approval rate (the ratio of number of granted loans to number of queries).

This block may include sub blocks devoted to: 1) queries for different type of loans (installment loans, credit cards etc.); 2) region differences in applicant's activity; 3) segments differences (such microcredits, large credits and so on).

**Block "Characteristics of borrowers".**

There are different social-demographic indicators and indicators of regional specificity can be proposed to including into this block. The most important are:

- 1) average age of applicants;
- 2) marital status;
- 3) average number of dependents;
- 4) region of living (geographically or cities/villages);

As addition it is possible to calculate indicators of borrower's activity:

- 1) Average total number of credits in applicant's credit history;
- 2) Average number of open installment credits in applicant's credit history;
- 3) Average number of active credit cards which applicant has in applicant's credit history;
- 4) Average number of closed loans in credit history.

**Block "Characteristics of granted loans".**

This block includes basic parameters of granted loans.

The basic indicators which can be received from bureau of credit histories are:

- 1) average granted loans amount;
- 2) average duration of granted loans;
- 3) average credit rate;
- 4) average monthly payments for granted loans.

**Block "Indicators of delinquency and risk".**

These are extremely important indicators for competitive analysis, which includes level of delay for varying degrees of arrears severity (Bad Rate) – 1 month, 3 months, 12 months and more. Especially important the indicator of the percentage of loans on which no payment was made (so called FPD – First payments default). Also is important indicator is the average amount of overdue.

The principal difference between benchmarking of bureau of credit histories is used the average market performance. Classical benchmarking is used best examples on the market. When we use benchmarking of bureau of credit histories we can consider following logic. Variations in the positive direction show some competitive advantages in comparison with the market and variations in the negative direction show weaknesses of the lender. Considered average market indicators and indicators of individual

banks enable an objective assessment of the market position of the bank.

It is necessary to take into account some aspects when proposed model in use. First, you must decide to which type of average value is used for comparison. There are arithmetic average and weighted average. It is important by fact that market has small and large retail lenders. When considering the average-weighted value it may be some shift to the side of large lenders. Secondly, the comparison may be between the absolute values and between relative values. The comparison of absolute values can effectively illustrate deviations for individual indicators, but not always correct to consider the cumulative integral comparison. To review and assess the position of the bank in total should take 1 (100%) for average performance. The values from the bank deduct a percentage of the market average. Thirdly, it is advisable to compare all the criteria arranged in one direction (maximize or minimize). Of course, this does not always have a direct economic sense. For example, the parameter "average loan amount" cannot be determined as indicator for maximization or minimization. However, the criteria related to the delay in payments are clear.

An important aspect is to compare the results of comparing the integral index, which describes the cumulative deviation parameters of an individual bank from benchmarking. As an integral performance comparison can enter the following:

TUW (Time under the water). It shows the percentage of indicators on which bank deviates from the average in the market in an unfavorable direction.

Semivariation. Let benchmarking process includes  $n$  indicators. The value of the indicators  $i$  to denote as  $x_i$  for particular bank and the value of benchmarking  $bm_i$  (taking into account the above proposed approach  $bm_i$  taken as 1). Then the semi-standard deviation defined as follows:

$$\sigma_+ = \sqrt{\text{semi var}_+}, \text{ where } \text{semi var}_+ = \begin{cases} \frac{\sum_{i=2}^n \alpha_i (x_i - bm_i)^2}{\sum_{i=2}^n \alpha_i} \\ \alpha_i = 1, \text{ if } x_i > bm_i, \\ \alpha_i = 0, \text{ if } x_i \leq bm_i. \end{cases}$$

$$\sigma_- = \sqrt{\text{semi var}_-}, \text{ where } \text{semi var}_- = \begin{cases} \frac{\sum_{i=2}^n \beta_i (x_i - bm_i)^2}{\sum_{i=2}^n \beta_i} \\ \beta_i = 1, \text{ if } x_i > bm_i, \\ \beta_i = 0, \text{ if } x_i \leq bm_i. \end{cases}$$

In fact, these values show the mean square deviation up and down from benchmarking. If  $\sigma_+ > \sigma_-$ , then the integral

index variations in the direction of positive integral index higher deviations in the negative direction. This is an indication that the bank's market position in the consumer credit market as a whole is better than the average market values.

In order to reflect the importance of variations on various indicators to calculate formulas  $semi\ var_+$  and  $semi\ var_-$  need to enter weights  $\omega_j$ . They should satisfy conditions:  $\omega_j \geq 0$  and  $\sum_{i=1}^n \omega_i = 1$ .

For example, formula to calculate  $semi\ var_+$  will be following:

$$semi\ var_+(\omega) = \begin{cases} \frac{\sum_{i=1}^n \alpha_i \cdot \omega_i \cdot (x_i - bm_i)^2}{\sum_{i=1}^n \alpha_i \cdot \omega_i} \\ \alpha_i = 1, \text{ if } x_i > bm_i, \\ \alpha_i = 0, \text{ if } x_i \leq bm_i. \end{cases}$$

**Example.** Let us supposed that someone choose 10 indicators for comparison by benchmarking model. All indicators correspond to maximization criteria. Average market value (calculated on the basis of the credit bureau) for these criteria selected as 1. The problem is to compare two banks A and B with average market values. The values of selected indicators (P1, ..., P10) are shown in the table.

|                     | P1   | P2  | P3   | P4   | P5  | P6   | P7  | P8   | P9   | P10  |
|---------------------|------|-----|------|------|-----|------|-----|------|------|------|
| Bank A              | 0,7  | 1,4 | 1,1  | 1,6  | 1,2 | 0,5  | 0,8 | 0,95 | 1,05 | 1,5  |
| Bank B              | 1,3  | 0,6 | 1,4  | 1,4  | 0,7 | 1,5  | 0,6 | 0,4  | 0,67 | 1,05 |
| Market Benchmarking | 1    | 1   | 1    | 1    | 1   | 1    | 1   | 1    | 1    | 1    |
| Weights $\omega_j$  | 0,05 | 0,1 | 0,05 | 0,05 | 0,2 | 0,15 | 0,1 | 0,05 | 0,1  | 0,15 |

The calculation of TUV values provide us by following results: TUV for bank A is 40%. TUV for bank B is 50%. The calculation of  $\sigma_+$  and  $\sigma_-$  shows following results:  $\sigma_+(A) = 0,37$  and  $\sigma_-(A) = 0,30$ . This means that "positive" deviations are more significant than negative deviations. The situations with bank B is reverse:  $\sigma_+(B) = 0,36$  and  $\sigma_-(B) = 0,42$ .

If we use weights presented in the last row in table then results will following:  $\sigma_+(A) = 0,12$  and  $\sigma_-(A) = 0,31$ . The relation between deviations became reverse. The situations with bank B is following:  $\sigma_+(B) = 0,13$  and  $\sigma_-(B) = 0,14$ .

Visual representation of benchmarking is present at Picture 2.

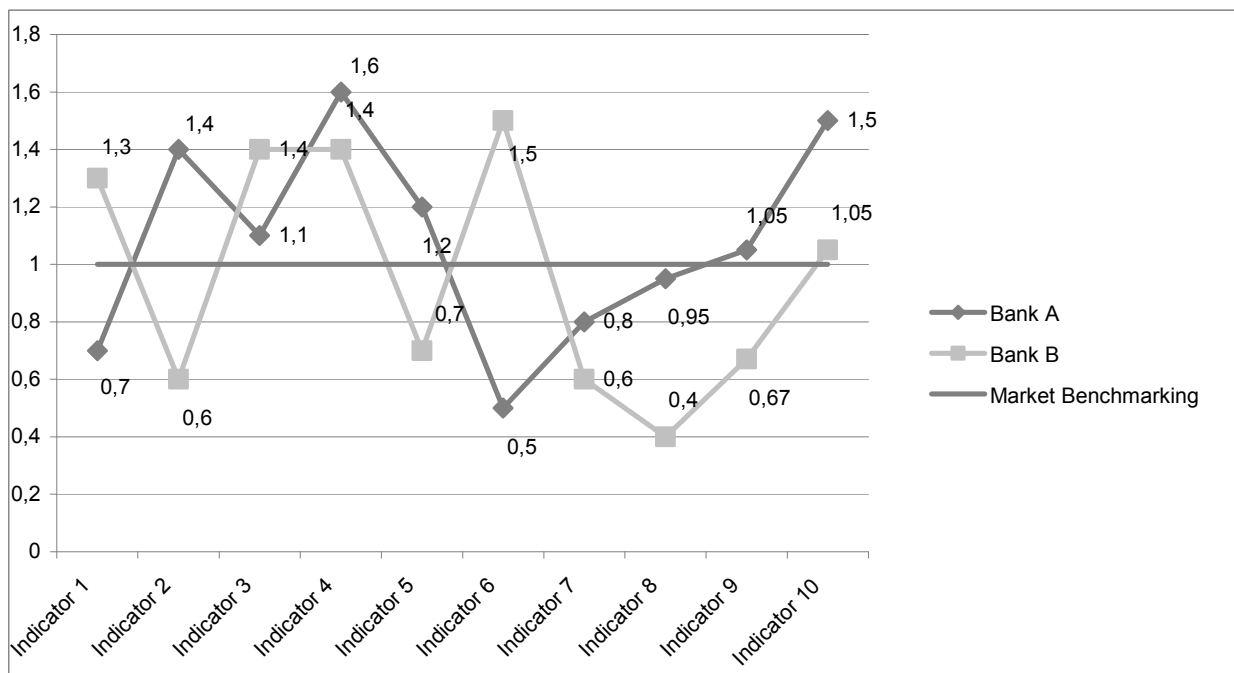


Fig. 2. Visual presentation of comparison with benchmarking

Source: composed by authors' calculations

**Conclusions and discussion.**

Let us form the conclusions. Modern market of consumer lending is a highly competitive and dynamically changing environment. To make profit at this market banks need to build effective strategies for the development of crediting business, which in turn means the market analysis and formation of their own niche products. An important

tool for this can be benchmarking provided by bureau of credit histories. Its essence lies in the possibility to compare parameters and credit risk of a separate bank with the parameters of the total market and its separate segments. The advantage of bureau benchmarking is that it accumulates a large amount of significant credit information that representatively reflects market parameters. In presentation

materials is represented a model of such benchmarking, which makes possible to perform complex (in the context of the four blocks of parameters) comparative assessment of a separate bank with the market. Based on the proposed model it can be developed an advanced business development strategies and created unique credit offers.

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### БЕНЧМАРКИНГ БЮРО КРЕДИТНИХ ІСТОРІЙ ЯК ІНСТРУМЕНТ ОЦІНКИ РИНКОВОЇ ПОЗИЦІЇ БАНКА НА РИНКУ

*Стаття презентує концепцію бенчмаркінгу на ринку споживчих кредитів. Сутність такого бенчмаркінгу у порівняльному аналізі параметрів банку та середньо ринкових значень, розрахованих на основі інформації з бюро кредитних історій. Використання бенчмаркінгу розглядається як інструмент для оцінки ринкової позиції банку.*

*Ключові слова:* бенчмаркінгу; бюро кредитних історій; конкурентоспроможність; банківське кредитування; ринок споживчих кредитів.

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### БЕНЧМАРКИНГ БЮРО КРЕДИТНЫХ ИСТОРИЙ КАК ИНСТРУМЕНТ ОЦЕНКИ РЫНОЧНОЙ ПОЗИЦИИ БАНКА НА РЫНКЕ

*Статья презентует концепцию бенчмаркинга на рынке потребительских кредитов. Сущность такого бенчмаркинга в сравнительном анализе параметров банка и среднерыночных значений, рассчитанных на основе информации из бюро кредитных историй. Использование бенчмаркинга рассматривается как инструмент для оценки рыночной позиции банка.*

*Ключевые слова:* бенчмаркинг; бюро кредитных историй; конкурентоспособность; банковское кредитование; рынок потребительских кредитов.

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## DEVELOPMENT OF SELF-EMPLOYMENT IN GLOBAL ECONOMIC CONDITIONS

*The article analyses factors effecting the development of self-employment activities in global economic conditions and, namely, liberal professions. The aim of this article is to identify the factors affecting the development of liberal professions. The methods used in this investigation are followers: scientific literature analysis, collection of information, comparison, generalization and logical analysis. The authors of this article concludes that the emergence of knowledge sector, increasing differentiation and flexibility of production and the growing role of creativity in value creation process determine the rising importance of liberal professions as one of the self-employment forms.*

*Keywords:* liberal professions, self-employment, creativity, professional career.

#### Introduction

Economic activities carried out by individuals, through which they seek to earn their income or receive other economic benefits, can be classified based on various criteria: sphere of activity, legal organization and ownership, scope and aim of activity, the number of involved individuals, etc. It is common practice in foreign countries to provide employment qualification statistics in terms of job creation criteria, in other words, to separate self-employed and employed individuals. Generally, individuals creating jobs (for themselves and others) are perceived as self-employed. Individuals who are hired for jobs created by others are perceived as employed. Self-employment can be collective (businesses with multiple owners) or individual (business license, liberal professions, independent creators and performers, freelance artists,

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individual craft companies). Due to perpetually rising scope of self-employment a need to define separate segments of this activity and regulate the participation of self-employed individuals in the society has emerged.

European Commission stresses the importance of economic analysis in respect to self-employment and dedicates much attention to liberal professions, which are labeled as one of the important sectors of European economy, providing considerable public services. European Economic and Social Committee in Information memo "The role and future of the liberal professions in European civil society 2020", notes that these professions assist in creating production structure, jobs and ensure considerable public services; they are a driving force of innovations, development and production, as well as an important measure in overcoming economic and social crisis (1).