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The Consideration of Seasonality Factor in Practice of Commercial Banks

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Abstract: Formation and development of the banking sector in Russia with adaptation of new and emerging financial technologies and solutions, largely based on the accounting a number of factors, affecting the results of banking business. Therefore, in the process of considering the prospects and dynamics of banking operations, reflecting the objective tendencies of the domestic banking sector transformation, it is necessary to take into account the seasonality factor. In modern practice, commercial banks faced with fluctuations in the demand for mortgage loans when over the period from February to April, its level reaches the minimum; similar fluctuations are also observed for bank deposits. This article contains an initial stage of a study, dedicated to the rationale of seasonality factor consideration, uniting both credit and deposit operations of commercial banks.

Key words: Considering of deposits seasonality factor, bank liquidity, adaptive approach, the seasonality of the loan portfolio, the methods of credit risk decreasing

INTRODUCTION

The stability of banking system largely depends on the impact on it of macroeconomic factors and the ongoing structural changes over the whole financial market. The activity of commercial bank requires the continuous improvement of operations including the increase of competitiveness, defining in modern conditions, by the degree of compliance with the needs of customers and fast growth of its customer's base. This, in turn, complicates the mechanism and procedures for their implementation, however, careful consideration of the factors, affecting the volume and the dynamics of credit and deposit banks operations, allows to adjust the already existing practice of such relationships. It is necessary not only to search for new opportunities in the external environment but also to improve the internal mechanisms, based on a higher level of operations formalization, although in reality the affecting of micro and macroeconomic factors totality sometimes can make the differentiation of banks credit portfolios unwanted (Muravetskiy *et al*., 2015).

The important issue for our study is the fact, that in the process of changing the parameters and structure of the internal system, the controlling actions can be changed, based on the available current information in order to achieve certain optimal state of the system (Acharya *et al*., 2006). The use in modern banking practice, the adaptive approach to the planning of separate lines of the bank's operation will significantly expand the capabilities and tools of forecasting possible changes.

Under the conditions when in the development of banking system, quality changes prevail over quantitative, adaptive approach can be called one of the most important ways to improve perspective analysis methods because the ideas of this approach well conforms with the practice of commercial bank operation in the conditions of functioning mechanism change, thus ensuring a high adequacy of adaptive models to real processes.

MATERIALS AND METHODS

Includes a set of scientific methods such as induction, deduction, analysis and synthesis, as well as special methods such as adaptive approach, regression analysis.

RESULTS AND DISCUSSION

In economic science, the following methods are widely used to study seasonal fluctuations: simple average, Fourier series and other, allowing to estimate seasonality with varying degrees of accuracy and labour intensity. For consideration the seasonality factor, it is advisable to move beyond daily values of total fund balances (basic data) to more aggregated values. Such changeover is appropriate because the changes of daily values are random and it is impossible to identify any seasonal patterns by them (Lunyakova, 2010). The changeover to the aggregated values is appropriate for identifying the common patterns of change in the total balances, taking into account seasonal factors.

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For forecasting processes, characterized by recurrent seasonal effects, we developed the special class of models, the distinctive feature of which is the presence in their structure the seasonality factors (Goncharenko, 2010). Depending on this coefficient, two types of models are distinguished. The first type includes the models with a multiplicative coefficient of seasonality:

$$x_t = a_{1t} f_t + \varepsilon_\tau \quad (1)$$

Where:

a_{1t} = The coefficient, changing in time; its dynamics characterizes the tendency of the development process

$f_t, f_{t-1}, \ldots, f_{t-1+t}$ = The coefficients of seasonality

t = The number of phases in full seasonal cycle (at monthly observations t = 12, at quarterly observations t = 4)

The second type includes the models with additive coefficient of seasonality:

$$x_t = a_{1t} + g_t + \varepsilon_\tau \quad (2)$$

where, g_t, g_{t-1}, ..., g_{t-1+1} are the adaptive coefficients of seasonality. Thus, for example, the analysis, conducted on changes in the values of deposits volumes in the banking sector of the Belgorod region, over the period from 1997-2015, allowed us to determine the wave of seasonality as for ruble as for foreign currency deposits (Fig. 1).

On the basis of the submitted, we can conclude, that the value of deposits during the calendar year varies according to the seasonal factors. It is noticeably the change of seasonality index which characterizes the position in June-August. At that, the fluctuations of index for ruble deposits can reach 5% and the changes within foreign currency deposits are more significant and figure up to 9% (Fig. 2).

Total balances on bank deposits are formed under different factors and may depend on the quantity of bank's customers. Exploring the impact of customer's base, it is necessary to take into account, that large investors with big balances on their current accounts may affect the nature and the parameters of balances formation. Crises have noticeable impact on the volume of deposits. For example, considering the factors of 2008, the seasonal wave of ruble balances varies slightly. But for the deposits in foreign currency, the direction of seasonal wave is reversed.

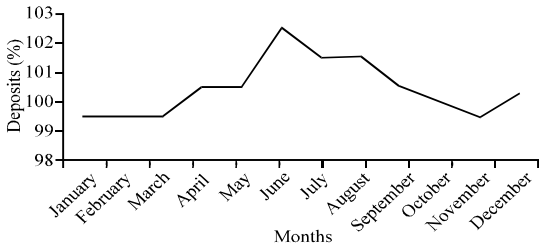

Fig. 1: The seasonal wave of balance of population deposits in rubles

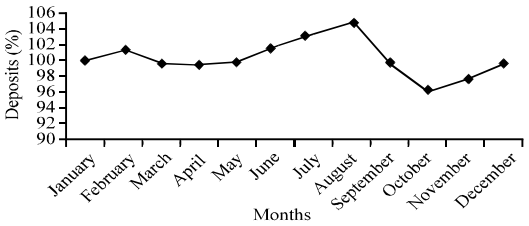

Fig. 2: The seasonal wave of balance of population deposits in foreign currency

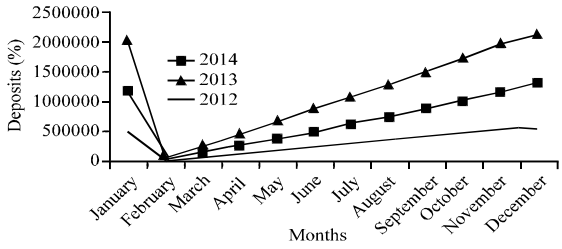

Fig. 3: The number of issued mortgage loans by credit organizations for the period from 2012-2014 (pcs)

The impact of seasonality factor in the banking practice is also manifested in credit transactions, such as volumes and dynamics of mortgage lending. In the Russian Federation, the number of issued mortgage loans by credit organizations has positive dynamics. The peculiarity of this type of loan is in distinctive seasonality of demand from borrowers (Fig. 3).

The demand for mortgage loans during the period from February to April is the minimum and during the summer months, the growth rate begins to increase and for the period of December-February, is reaching its maximum value. Apparently, this is due to the typical seasonality of household income whereas the seasonality is observed within the means, attracted by commercial banks to deposits of individuals (Goncharenko and Morozov, 2015).

Also mortgage lending can serve as a channel for the flow of financial resources to agricultural production and

other capital-intensive industries which require significant capital inputs (Behr *et al*., 2007). The loan, issued under the guarantee of real estate (mortgage loan) allows to increase the proportion of free capital in production, as well as to finance the purchase of land, expensive equipment, housing, construction of modern industrial buildings and structures (Berger *et al*., 2010). Mortgage loan is also attractive because it is the most long-term and therefore, has relatively low annual payments, that can be taken into account when modeling the scenario of further bank development (Karminsky and Kostrov, 2013). The consideration of seasonality factor as for the deposits, as for the loans, can be taken into account when forecasting the development tendency of the deposit policy under the modern conditions (Radionov, 2016) and forecasting the development of the retail loan portfolio of commercial bank on the basis of statistical modeling (Chapkina, 2011).

So, the creation of mechanisms for attracting long-term resources at acceptable prices for banks and, ultimately, for borrowers, is the precondition for the development of mortgage lending. The lack of long-term resources and high cost of funds attracted by banks, the absence of secondary mortgage loans market, contribute to the mortgage market limitation. To make the mortgage loan truly affordable can only the set of factors such as: the degree of real estate market development; property values; the volume of new housing start-up; the income levels of the population, their stability and transparency; the level of banking system and capital market development; regulatory factors and other factors, both internal and external-economic nature.

Constructed forecasting model, based on adaptive approach, suggests that the scope of bank lending is in the field of action of so-called seasonal factor. According to its natural manifestation with the increasing number of random events, their combined result becomes less random. However, the authors believed (for now only hypothetically), that small and medium-sized banks for the loan portfolio, have not the possibility to use the positive effect from manifestation of this law.

CONCLUSION

As an organizational way of this contradiction resolving, it is proposed the creation of the organization-the cooperative bank-combining loans with the most uncertain results (risks) in one portfolio. The consideration of seasonal factors allow to take into account the different information value of levels range which is used for the short-term forecasting, typical for banking processes with a pronounced cyclical nature. Therefore, the planning process of the deposits volume, within which the most likely and the desired results close in can be improved by means of adaptive approach, taking into account the seasonal factor. The need to improve the planning process in banking is dictated by the need to determine the financial results, forecasting development trends, evaluation of economical feasibility and appropriateness of the bank's activity as a whole as the various aspects of its activities.

Considering the daily variation of total balances as basic data, it is impossible to identify the impact of seasonality on their size. Adaptive models, considering the seasonal factors of banking transactions, can help to predict possible problems with an excess or lack of liquidity and other indexes. Ultimately, Factor models for the deposit and loan demand, based on the consideration of factors, both internal and external environment influence, helps to maximize profits.

The prediction of bank deposits balances total value by the bank is necessary for timely response for the possible deposit risks and increases opportunities to maintain a ratio between the extent of demands and liabilities of the bank, as for the terms, as for the amounts and in a timely manner to reduce the part of the bank's requirements to prevent the outflow of deposits. The consideration of influence of such factors as the clients quantity, set up accounts by them and consideration of seasonality factors, reduces the degree of uncertainty about the variation of total balances, that forms the basis for the improvement of self-insurance bank mechanism in terms of determining the value of predictable and unpredictable deposit risks and can be used later when forming Bank reserves in case of these risks occurrence (Lunyakova, 2010).

Seasonality factor model in the banking practice now is represented in the most general terms. It is necessary to continue the study and to refine its methodical, organizational and other aspects.

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