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МОДЕЛИРОВАНИЕ ПРОЦЕССОВ КРЕДИТОВАНИЯ КОММЕРЧЕСКОГО БАНКА С УЧЕТОМ СОВРЕМЕННЫХ ПРОБЛЕМ

Целью работы является разработка практических рекомендаций для формирования банковских пассивов, оптимизация их структуры и использования кредитных ресурсов коммерческого банка «Русский стандарт».

Практические рекомендации по оптимизации формирования и использования кредитных ресурсов коммерческого банка «Русский стандарт» могут быть применимы другими банковскими структурами.

Ключевые слова: оптимизационная задача, математическая модель, денежные средства, кредитный портфель, прибыль.

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MODELING OF KREDITING PROCESSES IN COMMERCIAL BANK ACCORDING TO CURRENT PROBLEMS

The purpose of the study is to work out practical recommendations for the formation of bank liabilities, optimization of their structure and the use of credit resources in the commercial bank «Russian Standard».

Practical recommendations, given for optimizing the formation and the use of credit

resources in the commercial bank "Russian Standard" can be used in different bank organizations.

Keywords: optimization problem, a mathematical model, cash, loan portfolio, profit.

The introduction of mathematical methods and models in the management of banking, in particular credit processes, is a factor of effectiveness for the bank's decisions and the formation of the bank's strategy [1].

The analysis of the activity of JSC "Russian Standard" Bank has shown that in general it works well and has a large profit [2]. This paper considers how to optimize of the bank's product portfolio, consisting of 15 retail bank loans with different maturities and how to construct a mathematical model of loan portfolio of JSC "Russian Standard" [4]. The presented loan portfolio was studied as a set of assets, loans, being a composite asset with parameters of risk and profit, changing under the influence of a combination of two factors: changes in risk and profit of assets components, due to the changes in the assets and the other conditions and changes in portfolio composition [5]. In the model we used the key economic indicators characterizing the financial activities of the bank [6].

So, the problem of optimization for compiling the loan portfolio at maximum profit has been solved. The following appropriate requirements that this procedure must comply with, have been worked out: the bank's management has decided that the total amount of retail loans, planned for placement next year should reach 310 billion rubles. Taking into account risk assessment of the planning period and the structure of the liabilities of the credit organization, this amount of money should be divided the following way: not more than 35% should fall on the consumer loans of quality category, not more than 50% - for the credit cards of quality category I, at least 10% - for consumer loans of quality category II, at least 5% - on the credit cards of category II. In addition, the proportion of delay across the portfolio should not exceed 12.5% of all granted loans, and the average loan term should not exceed 365 days, due to the time structure of bank liabilities. On the basis of these restrictions, the optimization purpose is to maximize profits, i.e., to increase the annual interest income from the loans granted to individuals. In this case the procedure of portfolio optimization by linear programming method involves the transformation of all the

above-stated limitations and the bank targets into the appropriate mathematical formulas.

The solution of the optimization problem allowed working out recommendations for optimizing the retail loan portfolio of the bank. First of all, we can recommend "Russian Standard" Bank to increase the funds for the provision of credit cards of quality category I. The optimized retail portfolio with regard to the limits should include the following items: loan product № 1 issued in the amount of 35 billion rubles, product № 7 – in the amount of 40 billion rubles, product № 11 - in the amount of 15 billion rubles and product №15 - in the amount of 10 billion rubles. As a result, the total amount of interest income earned for the year, will be estimated as 36.35 billion rubles, or 36.35% per annum.

Thus, to obtain the greatest profitability, we recommend to optimize the structure of the loan portfolio for consumer loans, because these loans are the most profitable ones.

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