FORMATION AND MANAGEMENT OF THE INVESTMENT PORTFOLIO OF A COMMERCIAL BANK

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ANNOTATION

The article discusses the issues of investment portfolios of commercial banks in the formation and management. Particular attention is given to risk management issues in the formation of investment portfolios.

Key words: investment portfolio, profitability and risk, investment portfolio structure, stages of investment portfolio formation, Markowitz model.

INTRODUCTION

The following considerations should be followed in the formation of the investment portfolio:

- security of investments (investments are not affected by changes in the investment capital market);
- liquidity of investments, ie their ability to immediately participate in the purchase of goods (works, services) and their conversion into cash without loss of value [1].

None of the investment values have all of the features listed above. Therefore, compromise is inevitable. If the stock is reliable, the yield will be low because someone who prefers reliability will offer a higher price and reduce the yield. The main goal in forming a portfolio is to achieve the most optimal balance between risk and return for the investor. In other words, the appropriate set of investment instruments should be aimed at minimizing the risk of the depositor's risk and at the same time maximizing his income.

MAIN PART

In order to effectively manage the investment portfolio, the financial sector manager should use the following principles, which are widely used in world practice in the formation of the investment portfolio:

94% of the return on investment will depend on the correct placement of funds by type of asset, which requires the correct choice of investment instruments used (shares of large joint-stock companies, long-term bonds, etc.); 4% of investment income will depend on the choice of specific securities of a certain type, and two% will depend on the ability to estimate the timing of the purchase of securities. The reason for this is that one type of securities will be very tightly bound to each other, meaning that if any industry is in crisis, the loss to the investor will be less dependent on the sheer number of securities of any company in its portfolio.

The risk of investing in a particular type of security is determined by the probability that the return will differ from the expected amount. The intended value of the return can be determined by analyzing the statistics on the increase or decrease in the return on investments in these securities in the past, and the risk is the change in the average square of the expected return.

The overall return and risk of an investment portfolio depends on changes in the use of the assets it contains. There are various programs that allow you to determine the optimal ratio of different types of assets, for example, to reduce the risk of a certain level of expected profit or to increase the risk of a certain level of risk.

The assumptions used in building an investment portfolio are probabilistic. When there are a number of factors that shape the stock market, it will be possible to build an investment portfolio in accordance with the requirements of classical theory only if it is set in a certain period of its validity, market statistics and so on.

The formation of the investment portfolio is carried out in several stages:

- setting portfolio goals, determining which of these goals is a priority (including, most importantly, the regular receipt of dividends and an increase in the value of assets), the level of risk, the prevention of loss of profit when changes in expected profits, etc .;

- the choice of a financial company (domestic or foreign financial firm), a number of criteria in decision-making include the reputation of the firm, the ability to work with it, the types of portfolios offered by the firm, their profitability, types of investment instruments used, etc .;

- choose a bank that maintains an investment account.

Determining the ratio between securities with different characteristics is a key issue in portfolio management. In particular, the principle of conservatism, the principle of diversification and the principle of sufficient liquidity are the main principles of classical conservative (less risky) portfolio formation.

The principle of conservatism. The ratio between the high-confidence and risk shares of the assets in the portfolio should be such that the losses that can be seen from the risk share are easily offset by the gains from the trust assets.

Thus, the investment risk is not to lose a portion of the principal amount, but to obtain a sufficiently high return.

It is natural that one cannot hope to get any high returns without taking risks. However, experience shows that the vast majority of customers are satisfied with the income, which varies from one to two levels of deposit rates, and do not want to increase the income due to the higher risk level.

The principle of diversification. Diversification of investments is the main principle of portfolio investment. Diversification reduces the risk that some securities will be less profitable than income from other securities. Risk mitigation is achieved by including securities of a number of closely related sectors in the portfolio to prevent the confidence activity from fluctuating from time to time. Forming a portfolio of different types of securities from 8 to 20 is the most optimal way.

The deposits occur scattered both between and within the active segments we noted above. When it comes to short-term government bonds and treasury bonds, diversification between different series of securities is necessary, while when it comes to corporate securities, diversification between shares of different issuers is considered.

Simplified diversification is the simple distribution of funds between several securities without serious analysis.

If the portfolio accumulates a sufficient amount of funds, the next step can be taken, which will allow diversification across sectors and regions.

The principle of sectoral diversification is to prevent the portfolio from being spent on the securities of enterprises in a single sector. The point is, a network as a whole can be at a disadvantage. For example, a drop in oil prices on the world market could lead to a sudden drop in the share price of all oil refineries, in which case the distribution of investments to different enterprises in the industry will not help the investor.

The same can be said about the enterprises of one region. As a result of political stability in a particular region, strikes, natural disasters, the launch of new highways bypassing the region, and so on, stock prices can fall sharply.

A more in-depth analysis can be done with the help of serious mathematical apparatus. Statistical research shows that the price of many stocks rises or falls even if there are no invisible links to belonging to a particular industry or region. Changes in the price of a pair of other securities, on the other hand, do not

depend on time. Naturally, diversification between the second pair of stocks is somewhat preferable. Adhering to this idea, correlation analysis methods allow to find the most optimal balance between different papers in the portfolio.

The principle of sufficient liquidity. The principle is to keep the share of quick-moving assets in the portfolio at a level sufficient to handle unexpectedly profitable transactions and to meet customers 'cash needs. Practice shows that it is more profitable to keep some of the funds in some liquid securities, even if they are less profitable, so that they will be able to respond more quickly to changes in market conditions and some beneficial offers. In addition, contracts with many customers require them to keep some of their resources in liquid form.

Markovits models. The basic idea of the Markovits model is that if the future income generated by a financial instrument as a random variable, i.e. the income on individual investment objects, is considered statistically, these revenues will fluctuate randomly over a certain range. In that case, if the probability of a certain yield is determined in any way for each investment object, it will be possible to distribute the probability of earnings on each alternative to investing. To simplify the matter, the Markovits model assumes that returns on investment alternatives are distributed in a (normal) manner [2].

The Markovits model shows that by combining risk assets with a correlation coefficient not equal to +1, it is possible to create an effective portfolio, i.e. a portfolio that provides the highest value of expected return for a stable level of risk or the lowest level of risk for a given expected return. In doing so, the investor acts rationally, i.e. for this level of risk it is assumed that he chooses a portfolio where higher returns are expected and seeks to invest all available available funds.

Markovits portfolio:

Maximize profitabilityMinimize risk

$$\max k_p = \sum_{i=l}^{n} X_i k_{io\text{ож}} \quad \min \sigma_p^2 = \sum_{i=l}^{n} \sum_{j=l}^{n} X_i X_j \sigma_{ij}$$

$$\sigma_p^2 = \sum_{i=l}^{n} \sum_{j=l}^{n} X_i X_j \sigma_{ij} \le \sigma^2 * \quad k_p = \sum_{i=l}^{n} X_i k_{io\text{ож}} \ge k *$$

Investors who only build a portfolio from risk-averse securities choose a specific portfolio from a group of securities that are more effective in relation to the portfolio's exposure to risk.

An important factor to consider when making investment decisions is profitability $k_f$is the ability to choose a guaranteed, risk-free investment.

The probability of return on a risk-free asset is equal to the expected return:

$$k_f = k_{fo\text{ож}}$$

and assumes that there is no risk of risk:

$$\sigma^2 = 0$$

The return on risk-free assets does not depend on the return on risky assets. Hence, risk in the combination of any risk asset with a risk-free asset is a linear function of asset risk.

CONCLUSIONS

According to the Markovits model, the volume of investments is determined by indicators that represent risk, which allows investors to compare different alternatives to investing in terms of goals, and consequently creates a scale to assess different correlations.

Of the revenues that can be seen as the expected revenue scale, in practice, the most probable value that matches the mathematical expectation is used when these revenues are properly distributed.

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