Conceptual approaches to the formation of the investment portfolio in the unit investment trusts in Ukraine

Konceptualne podejścia badawcze do tworzenia portfela inwestycyjnego w funduszach wzajemnego inwestowania na Ukrainie

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Summary
The peculiarities of formation of the structure of assets in the unit investment trusts are examined in this article. The article focuses on the basic components of the formation process of the unit investment trust portfolio assets and determines the features of different types of the investment portfolios in the unit investment trusts. Another point concerns a system which estimates the value of securities at the stage when the portfolio of assets is being formed in the unit investment trust. The article also analyses a system of factors which determine both benefits and risks the unit investment trust undergoes when the portfolio of assets has been already formed.

Keywords: unit investment trust (UIT), investment portfolio, securities, estimation of assets, investment efficiency

Streszczenie
W tym artykule opisano funkcje tworzenia struktury aktywów funduszów wzajemnego inwestowania. Podkreślono główne elementy procesu tworzenia portfela aktywów funduszów wzajemnego inwestowania. Określone cechy różnych rodzajów portfeli inwestycyjnych funduszów wzajemnego inwestowania. Przedstawiana system wyceny papierów wartościowych w tworzeniu portfela aktywów w funduszach wzajemnego inwestowania. Wyjaśniono karty wyników rentowności i ryzyka funduszów wzajemnego inwestowania.

Słowa kluczowe: zaufanie inwestycji jednostki (UIT), portfel inwestycyjny, papiery wartościowe, efektywność inwestycji
Actuality. As amount of the people’s savings tends to become higher it is a good prerequisite for them to become an investment resource. One of the best rational forms of transformation of the people's savings into investment capital is a collective investment in the unit investment trusts. In order to provide an effective process with the use of the private investor’s bankrolls it is necessary to create an excellent procedure as to the selection of securities and formation of the unit investment trust portfolio of assets on their grounds. To successfully manage a financial assets portfolio it is necessary to solve a complex of tasks. First of all, formation of the investment portfolio should be based on the securities with the best possibilities for their growth in value. In addition, division of the investment portfolio into the securities’ classes matters as it gives the possibility for different approaches in the assets management.

The aim of the work is to provide methodological recommendations as to the successful formation of the investment portfolio in the unit investment trust.

Research on the topic. The researchers such as L. Hitman, S. Martjushev, I. Lobanov, W. Milovidov, W. Nikiforova, F. Faboci i, D. Sachin, L. Prater, V. Bertin, K. Harington, U. Sharp, J. Bejli have made a significant contribution to the research concerning unit investment trusts activity.

Basic content. The investment portfolio is just the tool able to realize the goals set by the unit investment trust activity. Taking strategies of the unit investment trust activity and characteristics of the financial assets into account there is a possibility to form a variety of the investment portfolios each of which can be characterized by the acceptable level of the financial risk, prospective profits and a definite investment period [6].

Formation of the unit investment trust assets structure should be characterized as a complex of the following consecutive stages:

1. Determination of type and key parameters of the investment portfolio;
2. Development of the system selecting assets at the formation of their structure;
3. Estimation of risks and profitability of the unit investment trust with definite structure of the assets portfolio.

The first stage. To classifying a type of the unit investment trust portfolio it is necessary to determine a source the future investment earnings will be originated, i.e. a growth of the value of the definite financial asset or because of the current earnings such as dividends.

Considering the goals of the unit investment trust activity, there are three types of the investment portfolios such as a growth portfolio, an income portfolio, and a balanced portfolio[8].

1. A growth portfolio is based on the securities which show the growth of the market value.
The very inclusion of shares which can demonstrate the growth of value in the investment portfolio provides a capital growth in general.

2. An income portfolio provides obtaining high performance of the current income. First of all it is done at the cost of dividend earnings and interest payments. At the same time the portfolio structure should be basically generated from the securities which are characterized not by a high growth of the market value, but high dividend and interests regular payments. High-yield bonds and shares of the big low-risk enterprises should form a core of the income portfolio.

3. A balanced portfolio of unit investment trust should be simultaneously formed with two parts.

The first part consists of the assets providing capital growth at the cost of their growth of value which shares make in general. The second part consists of the assets providing regular incomes. These are mainly the interests obtained from incomes and payments of dividends from shares [11, p.8-11].

Due to such a structure this portfolio insures the investors of the unit investment trust against possible losses in the stock market caused by decrease of the value of securities as well as low both interests and dividends incomes from the securities. An investment strategy of the UITs the structure of which is of the balanced type, depending on the market conjecture should predict the revision of the proportions between securities characterized by a regular growth of the market value and securities which provide high current income. A structure of assets of this type of portfolios of unit investment trusts should be mainly generated from both privileged and simple shares of the enterprises as well as the bonds in which more or less financial resources of the UITs with reference to the market conditions and investment expectations are placed [9].

With reference to the type and level of the unit investment trust diversification it is necessary to allocate key parameters of the investment portfolio of the structure of assets.

For example, portfolio of the structure of assets can be characterized by the following key parameters.

At first, for example, the limits of investments according to the classes of assets should provide such limitations as:

- a fraction of the risky assets, namely the shares of the Ukrainian issuers should make 90%;
- a fraction of the low-risk assets, namely domestic government loan bonds should make 10%.

Secondly, the limits of investments according to the economic sectors provide:

- maximum fraction of the shares of the same sector issuers, cannot exceed 40%.

Thirdly, the limits of investments of the securities according to individual issuers anticipate:
• maximum fraction of the shares of a separate issuer cannot exceed 20%.

The second stage. During the process of formation of the unit investment trust assets the very process of the selection of assets is expected. In order to include securities in the investment portfolio it is necessary to assess the dynamics of the changes of their market value and analyze the activity of their issuers.

Essentially, there are two conceptual approaches in the process of assessing the value of securities and the activity of their issuers. These are the fundamental and technical analysis. [10, p. 7-12].

In general, a complex of the economic and non-economic factors that affect the changes of price of the investee belongs to the fundamental analysis of the investment.

Application of the fundamental analysis should anticipate the calculation of the so-called «fair» value of the investee, and especially shares purchased by the UIT. The inclusion of securities in the investment portfolio is appropriate only when it is characterized as one «undervalued» by the market.

Especially the purchase of shares by the unit investment trust should be done on condition that their fair calculated value is higher than that one on the market, i.e., in case if there is a tendency for their growth only.

The opposite situation takes place when the value of the securities is overestimated by the market, that is when its determined fair price is lower than the market’s one. In such a conditions the purchasing of the given securuties will not be effective, and in case they are in the investment portfolio it is necessary to realize them.

When unit investment trusts carry out a fundamental analyses of the objects to be selected for the capital investment there is a necessity to use two the most general methods, such as:

1. The comparative analysis and
2. Calculation of the “fair value” based on the discounted cash flows.

A key task of the comparative analysis should be determination of the most suitable securities, especially those issued by the companies which have clearly defined perspectives for the growth value among the others in the same sector. To solve the task concerning a rational selection of the securities for investment becomes possible only when appropriate coefficients that determine economic efficiency of the company will be applied. The most used coefficients of the comparative analysis of the companies are:

- P / E Ratio (price to earnings);
- P / S Ratio (price to sales);
- P / BV Ratio (price to balance value);
- P / FCF Ratio (price to free cash flow);
- P / R Ratio (price to reserves).
Those companies should be considered as perspective the rate of the coefficients (multipliers) of which are below the average at the market. In case the calculated ratio of the company is higher than the market one, than the value of its shares is overestimated, therefore there is no need to use them to form a structure of assets of the unit investment trust [2, p.1163].

Innovative approach of comparative analysis determination value of securities can include many factors in one indicator. For example this indicator can consist of the sum 0,5 P/E Ratio, basis on the company earnings and 0,5 P/S, basis on the company sales.

At the formation of the portfolio of assets by the unit investment trusts, besides application of the methods of the fundamental analysis, much attention should be also paid to the application of the methods of the technical analysis of the evaluation of the securities value.

The technical analysis of the evaluation of the securities value provided by the unit investment trusts is reduced to an estimation of the graphical information that characterises the changes of value of the securities and especially the tendencies in changes of the rate value of shares. In the scientific literature the technical analysis is described as a set of methods forecasting the changes of the cost of securities through the study of price development, volume of trading and other past market data. Technical analysis provides the assumption that changing the cost of securities in the previous period incorporates the influence of all factors and therefore provides the grounds to determine them in the future. [9, p.126-128]. According to the technical analysis the trend of the securities cost changes in the previous period considers all fundamental factors which influence on it economically, politically, and psychologically as well.

In accordance with the given generalizations, to make decision as to the formation of the investment portfolio with application of the technical analysis of evaluation of the securities value, the investment object itself plays no role; development of its value in the previous period is only important. Just because the investment decisions with application of the technical analysis are based on the charts showing the development of the cost of the objects for investment it is often called as a «graphic» analysis of the assessed value [1].

Control over the investment portfolio and application of the analysis of the assessed value of the securities included in that portfolio directly depend on their types and characteristics [5].

The assessment of the batch of shares in the unit investment trust in Ukraine should be done in accordance with their market value formed on the stock exchange rate established in the leading share markets «PFTS» and «Ukrainian Stock Exchange».

While estimating the cost of shares it is also necessary to consider the peculiarities which characterize their issuers. E.g., while estimating the cost
of shares it is necessary to take into account whether the enterprises which issued them are profitable or inefficient, and if they are trading in the open or closed markets, etc. While estimation a batch of shares placed in the UITs it is also necessary to consider what fraction exactly is in the statutory UITs of the enterprise. This because while evaluation of the batch of shares which makes more than 10% of the statutory capital of the company it is also necessary to consider the cost of the corporate rights originated from its possession [7]. In the share UITs, while selecting shares, besides the development of their cost, the level of the liquidity plays a main role. This is due to the high liquidity of shares, it is possible to review an investment portfolio structure in time by withdrawing the shares with little prospects and placing capital in the potentially profitable.

The liquidity of the investment portfolio of shares makes it possible to faster respond to the unfavorable changes both at the corporate level of the issuers and economy in general. Besides liquidity, when forming a UITs investment portfolio based on the shares, it is very important to establish and keep to an acceptable rate of diversification, including fixing maximum proportion of the financial resources in the shares of one issuer, for example at the level of 10-20%.

Based on the above characteristics of the fundamental and technical analyses of the assessed value of shares we can state that they both should must be applied in complex. According to this, the basic parameters of the activity of the issuers reflecting the “fair” value of shares and pace of the price changes should be taken into account simultaneously. In order to determine a list of securities to be included in the investment portfolio it is necessary to determine a potential of their growth in value. In accordance with the above information, the main criterion for the securities to be included into the structure of the assets portfolio of the UIT, there should be the pace of their prices growth adjusted by a coefficient that could fully characterize the level of their underestimation by the market or their fair value.

Therefore it follows that when selecting securities and determining their fraction in the unit investment trust investment portfolio structure it is necessary to calculate the synthesis rate, which will consider the pace of their growth of value as well as the main coefficients of the level of their underestimation by the market, e.g. P/E and P/S.

The third stage. At this stage it is necessary to make an assessment of incomes and risks of the unit investment trust, the assets portfolio of which has been formed. To fulfill assessment of the cost of shares of the unit investment trusts and to compare it with the data of other UITs, a set of the investment coefficients is applied.

Perhaps the most important of them is the Sharpe ratio [12], which is calculated as a proportion of the shares income minus no-risky income level to the rate of the share risk:
SR = (Rc – Rfc)/s,

Where, SR – UIT Sharpe ratio;

R‾I – average income of the unit investment trust per analyzed period;

R‾f – average income with no-risky asset per analyzed period;

σ – mean-square deviation of the share income from its average value.

The calculated value of Sharpe ratio should be compared with the data of the ratio of similar unit investment trusts which are its competitors in attracting of the investment capital.

Innovative approach could be comparison of the Sharpe ratio value of the analyzed UIT with the similar ratio that is calculated on average on specific market sectors, i.e. as to UIT risky assets formed mainly of shares or UIT with the bonds in the core of the portfolio structure is also reasonable. The average market Sharpe ratio is taken into account as a reference value in order to assess the effectiveness of management of the UIT relatively to the average market so-called “indexing” investments. In case Sharpe ratio value is lower than the reference index value it becomes clear that the rate of return on the capital placed in this unit investment trust is not sufficient and does not justify the level of risk that a assets management company undertakes.

Getting a negative index of Sharpe ratio indicates that it would be more rational to place financial resources in the so-called “risky-free” government securities, rather than to place them in this unit investment trust. For the UITs generated on the shares it would be reasonable to calculate a reference value of Sharpe ratio on the basis of the stock index, like those in Ukraine – the national index of the “First Stock Trading System” or index of the “Ukrainian Exchange”. For the UITs generated on the bonds the reference value of Sharpe ratio should be calculated on the basis of the share index, like “PFTS C-bonds» in Ukraine.

When determining a reference value of Sharpe ratio for the UITs that are characterized by a mixed structure of assets it is necessary to form an original composite index. The calculation of the reference value of Sharpe ratio will be made on its basis.

It would be a rational innovative approach to generate such a composite index as follows:

- 60 % a share fraction which form PFTS index;
- 40 % a fraction of the securities which form PFTS C-bonds index.

The given innovative structure of the composite index for calculating a reference value for the Sharpe ratio for the UITs with the mixed assets is provided as an example since the risky assets considerably prevail in the UITs with mixed investments and the very fraction of shares is higher than that of the bonds. Depen-
ding on the structure of assets of a particular UIT it becomes possible to review the above mentioned ratio of the risky and low-risk assets of the composite UIT.

While estimating the results of the process of assets management of the unit investment trusts it is necessary to apply other coefficients as well. In particular, we should use a coefficient of correlation of the UIT bonds income along with the income benchmark [3].

According to the type of the assets structure of the UIT there is a necessity to apply different income benchmarks. Regarding the UITs of the risky assets, which are formed with shares, income should be correlated with the stock indices «PFTS» and the «Ukrainian Exchange» index.

As an innovative approach for the UITs generated with the bonds and mixed-asset structure the correlation of income should be carried out with the income benchmark of composite indexes having above-mentioned structure.

The correlation coefficient of income of the UIT shares with benchmark income is calculated as follows:

\[
Cor = \frac{\sum (R_i - \bar{R}) \times (R_m - \bar{R_m})}{n\sigma_i\sigma_m}
\]

Where, \(R_i\) – an indicator of the unit investment trust income per accounting period.

\(\bar{R}\) – an average level of income of unit investment trust per analyzed accounting period.

\(R_m\) – an indicator of the stock index growth per accounting period.

\(\bar{R_m}\) – an average level of a stock index growth per analyzed accounting period.

\(n\) – a number of accounting periods during which an income level of unit investment trust and a stock index is calculated.

\(\sigma_p\) – standard mean-square value of income of unit investment trust per an accounting period.

\(\sigma_m\) – standard mean-square average value of income on the market (index) per an accounting period.

The beta coefficient of unit investment trust which characterises level of its risk settles payments as follows:

\[
\beta = \frac{\sigma_p}{\sigma_m} Cor
\]

Beta coefficient shows how important the connection between the income changes of the UIT and the level of the stock index growth which characterizes the market is. Having calculated this coefficient we can speak about a level of risk, which is typical to the unit investment trust. In case, when the value of the cal-
culated coefficient Beta UIT will exceed 1, than the risk level of the UIT will be considered as higher than the average one on the market. As opposed to this, when the coefficient Beta UIT is lower than 1, we should insist the portfolio of assets of the unit investment trust is characterized by the lower risk from that of the average on the market [13].

Coefficient Alpha [4] characterizes how professional a assets management company of unit investment trust is, and displays how much an average cost increase of shares exceeded the rate of the cost increase of shares which was expected in terms of the coefficient of beta UIT. Calculation of alpha coefficient is as follows:

\[ \alpha = R_i - \left( R_{\bar{f}} + (R_m - R_{\bar{f}})\beta \right) \]

Where, \( R_i \) - average level of income of unit investment trust per an analyzed accounting period.
\( R_{\bar{f}} \) – average level of income with no-risky assets
\( R_m \) – average level of stock index growth per analyzed accounting period.
\( \beta \) – UIT Beta coefficient

**Conclusions.** Provision Effective functioning of the unit investment trusts becomes possible only when formation of the investment portfolio is irreplaceable. The process of formation of the investment portfolio consisting of securities, should be performed according to the type of the unit investment trust and determined acceptable parameters of income, risk and liquidity. The core of the effective investment portfolio of the unit investment trust should be formed with the perfect system of selection of assets based on the parameters of their investment appeals, i.e. a growth rate of value, P/E, P/S, etc. Only with complex application of such parameters as Sharpe ratio, Alpha and Beta Ratio, etc it is possible to speak about the effectiveness of the UIT’s activity and how perfect its investment portfolio is.

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