

APPLICATION OF POINT METHOD TO EVALUATE SPECIAL PROPERTY FUNDS

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Abstract

The financial markets offer a variety of investment methods by which available financial resources can be valorised. In addition to investing with stocks, bonds and other derivative securities, the investor has the option to deposit money to so called special real estate funds. Very important information for each investor is the fund efficiency, net sales, but also the minimum amount of the first investment, which determines the possibility of investing. After a comprehensive comparison of variants it is possible to arrange them according to their order of preference in decreasing list representing overall assessment. This article describes a comparative analysis of special real estate funds. A comparison was implemented with a score method, which is one of multi-criteria quantitative methods. Each criterion has a weight to indicate its importance. The result of an analysis is a chart of fund effectiveness.

Key words

Special real estate funds; REIT; comparative analysis; quantitative methods

To cite this paper: *Pánik, M. (2014). Application of point method to evaluate special property funds. In conference proceedings of People, Buildings and Environment 2014, an international scientific conference, Kroměříž, Czech Republic, pp. 367-373, ISSN: 1805-6784.*

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1 INTRODUCTION

On the first May 2006 the amendment to the Act of Collective Investment came to validity and since this moment first real estate funds in Slovakia could have been established. Special real estate funds (SREF) allow investing directly in buildings, land and constructions. Prior to the formation of real estate funds it was possible to invest in real estate only indirectly through sector of real estate equity funds, which were not very demanding because of their focusing on foreign markets. Also differences in exchange rate represented a certain risk [1]. Assets in special real estate investment funds can only be used for investment into real estate including accessories. They can also be used as an investment into equity stocks in real estate companies.

Special real estate funds can get closer to so called REIT in the future which could bring significant savings and more professional property management, which might contribute to the development of real estate market [2]. "Real estate investment trusts (REIT) represent important institutions in the world, which allow increasing the liquidity of real-estate assets by increasing the willingness of investors to invest in real estate sector. The increase in financial flows to the real estate sector allows construction developers to know better the needs of different segments of the real estate market. It also brings a possibility to reduce the risk when investing in real estate, since the REITs provides professional property management" [2].

REITs are highly liquid assets that can be sold relatively quickly. REITs have significantly better access to capital and credit markets than ordinary investors. The main advantage of investing in REIT's is professional management and personal team of experts that provides investors with a large amount of knowledge and experience. Another advantage is the avoidance of double taxation and simple diversification of investment projects in different geographical areas. REITs focus on various specific areas such as investment in residential real estate, commercial real estate, offices, medical and hotel real estate [2].

REITs working regimes are currently different in every European country. In order to provide efficient usage of REITs, it is necessary to establish common rules and legislation. One of the important common practices should be providing payments of net profit [3]. Listing of REITs on the stock exchange is required only in 6 of 13 EU countries. Advantages and disadvantages of the listing on stock exchange are debatable. Pan-European REITs should not be listed on stock exchange [4]. USA's REITs are so commonly spread that they take care of retirement homes and medical facilities better than the public sector. These types of REITs are not typically involved in developing process [5]. In the USA's hotel sector it was discovered, that the hotels provided by REITs reach higher increase of occupancy and higher increase of incomes than hotels in private sector. Higher efficiency of REITs is the impact of better acquisitive decisions [6]. In the USA it is typical that REITs invest into same type of real estate in different states. This way their portfolio is diversified and they gain economies of scale of operations. In opposite to that, for European REITs it is more typical that they diversify their activities into different types of real estate [7]. In addition to regular above average payment of dividends the REITs also provide stable and high incomes preserving the low rate of risk [8].

Špírková defined some requirements that are necessary for REITs:

- Distribution of at least 90% of profits to shareholders
- At least 100 shareholders
- At least 75% REIT assets must consist of real estate
- REIT shares must be transferable without restriction
- REIT must be managed by the Board of Directors
- They must be taxed as a body corporate

REITs are divided into two groups [9]

- Equity REIT - investment in offices and in commercial and industrial buildings
- Mortgage REIT - Investing in the financial markets in the form of mortgage bonds, they do not own and do not manage properties

The investment in special real estate funds (SREF) is very popular in Slovakia what is also shown in fund ranking, where "PP – Náš prvý realitný š.p.f." and the fund "TAM - Realitný fond" reached in the category of net sales first and third place [10]. However, there are more charts, because funds can be compared according to different criteria. It is important to know the key criterion for the investor and which criterion is least important. Individual comparison of funds by various criteria is very time consuming and inefficient. Therefore, it is more effective to use methods of quantitative analysis when comparing a large number of funds. In this article is used mathematical and statistical method which evaluates the effectiveness of special real estate funds, taking into account several criteria simultaneously.

2 MATERIAL AND METHODS

Statistics of special real estate funds (SREF) are regularly published by the Slovak Association of administrating companies [11]. Appropriate information about SREF is important for effective investment decisions. For comparison of SREF it is necessary to choose expertly estimated criteria on the basis of which the comparison of funds is realized. A very important information for each investor is the fund efficiency, net sales, but also the minimum amount of the first investment, which determines the possibility of investing. For assessment of the effectiveness of each fund the following comparative criteria have been chosen (criteria abbreviations are listed in parentheses):

- Efficiency in 6 months in % (e_6m)
- Efficiency in 1 year in % (e_y)
- Efficiency in 3 years in % (e_3y)
- Annual fee for administration and depository in € (fee_a_d)
- The minimum amount of the first investment in € (min_inv)
- The maximum entry fee in % (max_entry)
- The maximum exit fee in % (max_exit)
- Net sales in SR per year in € (sales)

The analysis of the special real estate funds is not considering the "PP – Náš druhý realitný, š.p.f.", due to it is relatively young origin (also some information about the decision-making criteria is missing). Details of the criteria of the real estate funds are shown in table 1.

Tab. 1: Comparative criteria of SREF (source: [3])

Funds	Net sales in SR per year in €	Fund's efficiency in 6 months in %	Fund's efficiency in 1 year in %	Fund's efficiency in 3 year in %	Annual fee for administration and depository in €	The minimum amount of the first investment in €	The maximum entry fee in %	The maximum exit fee in %
IAD – Prvý realitný fond	10 460 534,93	1,67	3,84	3,96	1,69	1 000,00	3,00	0,00
PP – Náš prvý realitný	119 477 498,71	3,02	4,41	5,27	1,90	165,00	2,50	0,00
SPORO – Realitný fond	303 706,79	-0,90	-1,93	-0,83	1,70	500,00	3,00	0,00
TAM – Realitný fond	86 463 227,30	1,44	2,57	2,95	1,67	150,00	0,00	5,00

Comparison of special real estate funds is calculated using the point method of weighted sum, which belongs to multi-criteria quantitative comparative methods. In general, considering multi-criteria comparisons, there are "m" variants "ai", i = 1, 2 .. m and "n" criteria "kj", j = 1,

2, ..n. The value of the criterion "j" and the variant "i" is "z_{ij}", i = 1, 2,..m, j = 1, 2,...n. The task is characterized by dimensional matrix "Z", where variants are rows and criteria are columns [12].

The comparison criteria may have a maximization character (stimulators), or minimization character (destimulators). The higher numeric value of stimulators means positive effect on assessment of the variant and vice versa for destimulators. To solve the problem of multi-criteria comparison of variants it is necessary to transform the task to one criterion problem. Transformation of criteria is calculated as a subtraction of the maximum value of the minimization criterion "j" and its current numeric value

$$\max z_{ij} - z_{ij} \quad (1)$$

The criteria in general have different importance. The weights "v_j", (j = 1, 2,...n) determine the degree of preference.

$$\sum_{j=1}^n v_j = 1 \quad (2)$$

$$v_j \geq 0, \quad j = 1, 2, \dots, n \quad (3)$$

The values of the criteria are often generally incomparable. Comparability can be provided by standardization. Standardization means transformation of values of criteria into comparable range. The result of standardization is a standardized matrix $R = \{r_{ij}\}$, where r_{ij} values are calculated as:

$$r_{ij} = \frac{z_{ij}}{h_j} \quad (4)$$

"h_j" - max value of "z_j" [12].

The method of weighted sum is one of the point methods, when efficiency of all variants "r_i" is calculated as weighted sum of weights "v_j" of relating values of criteria "z_{ij}"

$$r_i = \sum_{j=1}^n v_j z_{ij}, \quad i = 1, 2, \dots, m \quad (5)$$

The optimal variant is identified by its sum of the products of the weights and values of the criteria. After a comprehensive comparison of variants it is possible to arrange them according to their order of preference in decreasing list representing overall assessment. The optimal variant is the one with the highest rating [12].

3 RESULTS OF ANALYSIS

Table 2 shows fund input data and expert estimation of weights.

The table also contains information about the type of criterion. Net sales and the efficiency of funds belong to maximization criteria, because the higher value the fund reaches the better the fund is considered. Administration and depository fee, minimum investment fee, the maximum entry and exit fee are destimulators, because the lower value the criterion reaches the better the fund is considered. Weights are estimated by expert analysis. Considering the long term investment the fund efficiency in 3 years (weight 0,35) is the key criterion. Other criteria are

assessed by weights which are based on the individual preferences of the decision maker - the investor.

Tab. 2: Fund input data (source: author)

fund	sales	e_6m	e_y	e_3y	fee_a_d	min_inv	max_entry	max_exit
IAD	10 460 534,93	1,67	3,84	3,96	1,69	1 000,00	3,00	0,00
PP	119 477 498,71	3,02	4,41	5,27	1,90	165,00	2,50	0,00
SPORO	303 706,79	-0,90	-1,93	-0,83	1,70	500,00	3,00	0,00
TAM	86 463 227,30	1,44	2,57	2,95	1,67	150,00	0,00	5,00
criterion	max	max	max	max	min	min	min	min
weights	0,1	0,05	0,13	0,35	0,1	0,2	0,05	0,02

Table 3 shows input data after transformation from minimizing to maximizing criteria according to equity (1).

Tab. 3: Fund data after criteria transformation (source: author)

fund	sales	e_6m	e_y	e_3y	fee_a_d	min_inv	max_entry	max_exit
IAD	10 460 534,93	1,67	3,84	3,96	0,21	0	0	5
PP	119 477 498,71	3,02	4,41	5,27	0	835	0,5	5
SPORO	303 706,79	-0,90	-1,93	-0,83	0,2	500	0	5
TAM	86 463 227,30	1,44	2,57	2,95	0,23	850	3	0
criterion	max	max	max	max	max	max	max	max
weights	0,1	0,05	0,13	0,35	0,1	0,2	0,05	0,02

Standardized matrix "R" according to equity (4) is in fig. 1.

0,0876	0,5530	0,8707	0,7514	0,9130	0,0000	0,0000	1,0000
1,0000	1,0000	1,0000	1,0000	0,0000	0,9824	0,1667	1,0000
0,0025	-0,2980	-0,4376	-0,1575	0,8696	0,5882	0,0000	1,0000
0,7237	0,4768	0,5828	0,5598	1,0000	1,0000	1,0000	0,0000

Fig. 1: Standardized matrix "R" (source: author)

Table 4 shows the final efficiency of special real estate funds (according to the equity) after taking into account the weights of criteria (5).

Tab. 4: Fund efficiency by various criteria after weight consideration (source: author)

Note: the matrix is multiplied by coefficient 10000

fund	sales	e_6m	e_y	e_3y	fee_a_d	min_inv	max_entry	max_exit	efficiency
IAD	88	276	1132	2630	913	0	0	200	5239
PP	1000	500	1300	3500	0	1965	83	200	8548
SPORO	3	-149	-569	-551	870	1176	0	200	979
TAM	724	238	758	1959	1000	2000	500	0	7179

The final order of the funds according to efficiency of each SREF is shown in table 5 and in the fig. 2.

Tab. 5: Arrangement of funds by their efficiency (source: author)

Place	Fund	Efficiency
1.	PP	8548
2.	TAM	7179
3.	IAD	5239
4.	SPORO	979

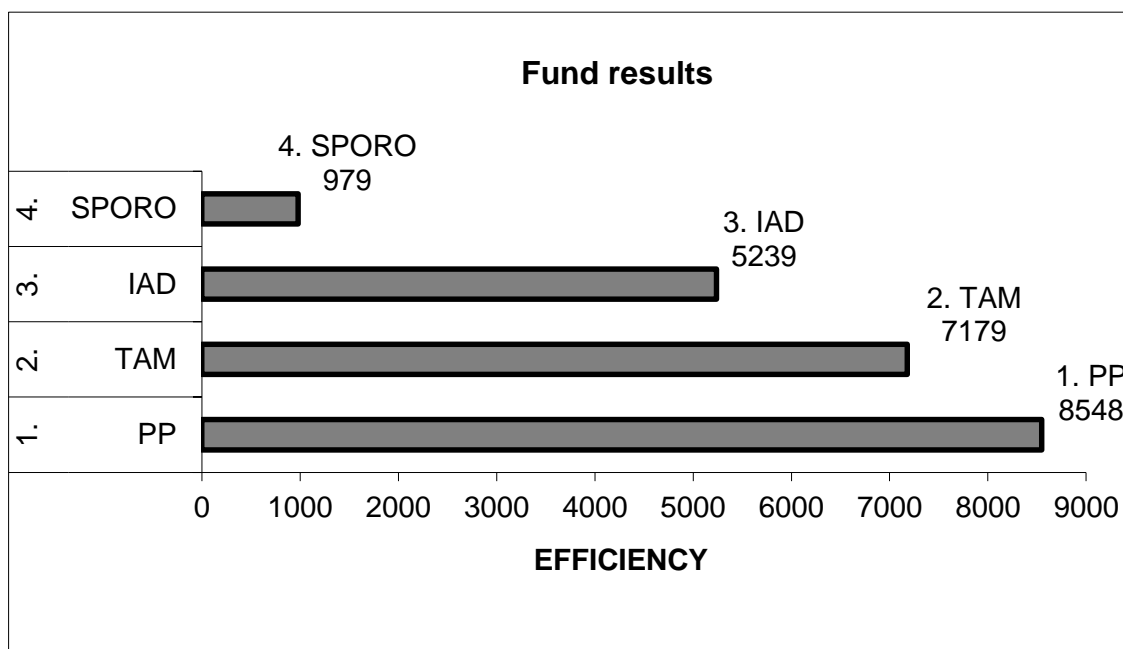


Fig. 2: Graphical review of efficiency of special real estate funds (source: author)

4 DISCUSSION

Application of point method results into final order in the chart of fund effectiveness. However, assessment of funds using this method brings several complications. There are more problems. The link between weight and how the dimensions are measured. The person who sets the weight may not always be aware of this. The interactions between dimensions. A change in one dimension may be very important if the other dimensions have a certain value, but a low value if the other dimensions have certain other values. Comparing of variants can also be provided by other multi-criteria methods, for example Concordance analysis, which compares every variant with others in pair comparison. It is also possible to use Electre method, which uses limit functions to identify the preference level of each criterion. The preference level is defined by the decision maker, which has significant impact on the final variant assessment. Application and effectiveness of these methods might be a subject for other research.

5 CONCLUSIONS

The special real estate funds are one of the effective financial investment options. For choosing funds to which the decision-maker should invest it is important to individually consider the importance of each criterion with weight.

The result of comparative analysis based on a point method of the weighted sum is the arrangement of funds by their efficiency from the most efficient one to the less efficient one. Considering our input data the most effective fund is "PP – Náš prvý realitný", with the overall assessment at level 8548, which is already the most popular fund regarding to sales in Slovakia.

The fund "TAM – Realitný fond" is the second best option with 7179 points and the third place takes "IAD – Prvý realitný fond" with 5239 points. The last place belongs to the least efficient fund "SPORO – Realitný fond", which reached 979 points.

The advantage of multi-criteria analysis is the comparison of variants which takes into account all criteria simultaneously. In the future it would be interesting to compare the effectiveness of real estate funds with other funds from other categories, such as money market funds, bond funds and equity funds.

AKNOWLEDGEMENT

This paper is supported by Grant VEGA no. 1/1013/12 "Economic aspects of energy savings in buildings" and STU-Young Scientist 2013.

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