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# Review

# PhD thesis of George Matysiak, M.Sc.

## New Approaches Towards the Classification of Risk-Return Investment Styles of European Unlisted Commercial Real Estate Funds (UCREF)

written under the guidance of

Professor Jarosław Kaczmarek Ph.D.

### 1. The basis for writing the review

The legal basis for writing the review is the decision of the Council of the Scientific Discipline Economics and Finance of the Cracow University of Economics, dated April 24, 2023. The decision was communicated to me by a letter from the Director of the Doctoral School of the Cracow University of Economics, Mr. Professor Stanislaw Popek Ph.D., dated May 4, 2023

### 2. Substantive assessment

#### 2.1. Relevance of the undertaken research issues and its originality

Investments funds are pools of money collected from multiple investors (individuals or fund managers) that are used to invest in various financial assets. These funds are managed by professionals who try to create portfolios of investments with the goal of generating returns for the investors. These investment funds offer for investors to gain exposure to a broader range of assets than they might be able to gain on their own.

Unlisted commercial real estate funds (UCREF) growth occurring in recent years has contributed towards establishing this sector of investment as a main vehicle for gaining exposure to commercial real estate.

For an individual investor is not easy to invest directly in properties due to their specific characteristics especially illiquid and lumpy nature of property and large amounts of capital. Therefore there are a lot of individual investors who insert their money in different real estate funds. This allows them to invest smaller amounts, not to manage this fixed asset, but to receive profits from its proper use. To gain indirect exposure to commercial property is possible by investing in listed stock exchange commercial property companies, called Real Estate Investment Funds, or – alternatively or in parallel – investing in unlisted real estate funds. Choosing among the various options depends on decisions made by investors individually.

However, investors (individuals or fund managers) need comprehensive information about investment style of funds – listed and unlisted - to gain a clear understanding of their investment activities. About the former, because they are listed on the stock exchange, information is more complete and easier to obtain. More uncertain and unclear to investors are the actions and strategy of the latter.

Investors (individuals or fund managers) making their decisions rely on general guidelines which express the strategy of the funds and establish their "investment style". The classification of these styles includes three category of funds: Core, Value-Added and Opportunistic or Opportunity funds. This third invests primarily in distressed undervalued and difficult to sell properties. This is a specific strategy aimed at long-term growth in the value of these properties through their development. Thereby opportunity funds are high-risk investments and rely on high levels of borrowing and finally are different, because of their styles, then these first two: Core and Value-Added.

Consequently Mr George Matysiak focuses his research on the Core and Value-Added funds where the distinction can be unclear and, what is also important, because in the literature are not appear to be any reported empirical works that has classified these funds on their ex ante characteristics using quantitative methods. Typically, ex post data is used in classifying funds,

although this ex post classification is backwards looking and that is why is rather unable to classify new funds by using this method.

For these reasons, I consider the doctoral student's choice of topic necessary and pertinent, both from a theoretical and practical point of view.

**2.2. Correct formulation of problems and hypotheses (research assumptions)**

Before I move on to assess the correctness of the hypotheses formulated by the author of dissertation I must emphasize his correct identification of the research gap in its theoretical, methodological and empirical aspects.

The author suggests that the existing system of classification of UCREF is not accuracy enough, although is based on several criteria, but has never been investigated. Furthermore, Mr. Matysiak says, and he is right, current system was found to be inappropriate. It is obvious that system of classification based on ex post data cannot be used for newly created funds. So finally, taking into account the recognized research gap the author considered the main objective of the research as creation and development a new classification system for UCREF. What is extremely important from theoretical and practical point of view the system is reflected UCREF risk profiles. Such an outlook on the problem is especially expected by investors.

The author main goal mentioned above was supported by five partial goals, as follows:

1. To describe the role and growth UCREF, their objectives and investment styles
2. To assess whether the UCREF investment performance is partly determined by performance by the underlying commercial property market
3. To establish whether the characteristics of the new clusters determine their risk class
4. To establish whether the new clusters investment performance is consistent with their risk
5. To compare the risk-adjusted investment performance of the new clusters

Such an extremely ambitious and detailed approach to investment styles and the associated risks was translated into the research hypotheses formulated by the author.

The main research hypothesis, which strictly corresponds to the primary goal of the dissertation, is as follows:

H(0) – *The current classification of private real estate funds into two classes, classified as Core and Value-Added, accurately reflects the number of risk classes*;

Whist the alternative is:

H(a) - *The current classification of private real estate funds into two classes of Core and Value-Added is imprecise as there are more than two classes of risky funds.*

The validation of the above hypothesis is undertaken by the author from three perspectives: an ex post data perspective, a statistical/clustering perspective and econometrically. It is also addressed with the context of the five partial hypothesis, which were addressed in turn in the research and are as follows:

1. The evolution and growth of UCREF is the result of demand from investors for exposure to commercial real estate as an investment asset class and the growth in international commercial real estate markets
2. The investment performance of UCREF is partly determined by the performance in the underlying commercial property market
3. The characteristic features of individual funds and their subsequent ex post risk define their risk class
4. Statistical/econometric models incorporating risk clusters can contribute towards understanding UCREF investment performance
5. Higher risk funds provide higher risk adjusted performance compared to less riskier funds

As can be seen, the detailed hypotheses formulated by the author correspond closely with the adopted research objectives, which emphasizes the coherence of the subsequent parts of the dissertation. Thus, they do not raise doubts, so they can be considered to have been formulated correctly.

**2.3. Evaluation of the dissertation methodology and structure used by the author**

Given that the dissertation's hypotheses were very elaborate and involved complex issues of real estate funds, the methodology used had to be tailored to the dissertation's goals, and through it is also multi-stage.

As an author wanted to classify new UCREF there is no historical data regarding their investment performance. However there is some available information ex ante data. So, in the first step the author used the ex-ante data to identify groups of “similar” UCREF. Next, in the second step, he used the actual investment performance, ex post data. It allows him to

clean data, then address data issues and finally determine criteria for selecting UCREF. So, finally each cluster consists of funds with similar risk characteristics.

In pursuit of the research goal of providing a classification system and a practical tool for classifying UCREF, cluster analysis suggested itself as the appropriate method for the goal.

In the next step several models were evaluated by the author based on characteristic of the data. K-Prototypes clustering and latent class analysis (LCA) were selected by him as the most suitable options. Using these two methods enabled him to compare the results of both of them. Essentially, the K-Prototypes method uses distance measures between UCREF to allocate funds to a cluster whilst the LCA model uses probabilities to allocate the UCREF to a cluster. Although the methods were different they both indicated a similar number of clusters. This confirmed the assumptions made by the author and allowed him to move on to the next stage in which he validated and estimated the clusters.

Generally the stag 2 based on risk measures and was going to interpreting them from a financial perspective. The analysis relies on historic quarterly investment performance data and various risk measures which were used to calculate quarterly total rate of return and various risk measures. After the analysis the number of clusters were allocated to the respective ranked clusters to observe how they were distributed. It is also note the fact that the estimated clusters fall into the class of categorical variables and so an appropriate method needed to be used in modelling them. Finally , after consideration of several models, the most appropriate models were: multinominal model and ordered logit model.

In order to reach the final result, the author tested different variants and models before formulating final conclusions. To achieve this the econometric model was estimated for the two logit models and the LCA model as well. These research supported the validity of the established clusters from a financial perspective.

It is also note the fact that the author has taken great care in selecting methods enabling him to achieve the assumed goal. The division of the content into individual chapters, which step by step brought the author closer to achieving the goal of the dissertation, also had the advantage that the content is clear and the way of presenting thoughts is understandable and unequivocal.

It is also worth paying attention to the structure of the reviewed dissertation. In my opinion, the structure of the work, proposed by the author, perfectly reflects his way of thinking and brings the reader closer, as the author intended, to the final conclusions. For this reason, it should be considered appropriate, enabling reliable perception of the considerations undertaken by the author.

A synthetic reminder of the contents of these six chapters confirms the above statement.

The first chapter provides an overview of the characteristics and investment features of commercial real estate markets in which UCREFs are invested. The author shows the role of modelling and forecasting used by fund investors. A perfect literature review is provided in this chapter as well.

The second chapter focuses on the functioning of real estate funds, their development and market. Its also provides a review of the evolving literature and proves the author's deep understanding of the problem. He discusses different styles of investing in two type of funds: core and Value-Added. The differences between their strategies and styles are also documented perfectly.

The third chapter deals with the cleaning of address data. The author discusses the UCREF data , its characteristics and provides details on the investment performance of the UCREF styles.

In the fourth chapter the author turns his attention to the sources of risk, their measurement and the diversification of risk in the real estate investment portfolios. The author also stresses the importance of non-trivial problem as the underlying risk will be underestimated. Based on statistical testing the author identifies the funds with smooth returns and with similar phenomena it is discussed in this chapter.

Chapter fifth stipulates the goals and the hypotheses of the research and the dissertation. And in the sixth chapter, the final, the author presents the empirical results of the various models estimated by him with the analysis of the results of the hypotheses tests.

The structure of the dissertation used by the author has allowed him to clearly communicate his way of researching the problem and ultimately enabled him to show that the dissertation's goal was achieved. At the end, there was also an opportunity to explicitly address the

previously stated hypotheses were verified. Also the add value in the new funds could be classified by the author.

From these reasons, I was able to conclude above that the structure of the dissertation was skilfully chosen to meet the goals the author wanted to achieve. The step-by-step presentation of the research methods adopted and the results achieved is very convincing. It demonstrates the author's great understanding of the problems he discusses and proves that he has devoted a lot of his time, energy and commitment to achieving this goal, building a dissertation that is precise and convincing in its content.

I also want to emphasize As far as the selection of literature and the ability to use sources is concerned, I have no objections. The literature was selected appropriately to the subject of particular chapters, enriching and justifying the author's way of thinking.

**3. Obtained results and their significance for learning and practice**

The research that has been presented by George Matysiak in his doctoral dissertation contributed a significant methodology by adopting a two-stage approach. First – he was used ex ante data to identify clusters, especially allowing fir the classification of new UCREF into appropriate clusters. Most studies use ex post data which do not allow the classification of new funds. Therefore, the method proposed and used by G. Matysiak is original and innovative. Additionally the author has proved that LCA method can be used as a first step approach for fund managers who have to or want to classify their funds in a more personalised manner. He also confirms that LCA can be recommended for new UCREF as a simple and cost-effective method.

The second important contribution made by George Matysiak in his dissertation was the validation of Stage 1 clusters based on ex post data using risk to rank the clusters and determined the validity of the clustering and classification approach. The robustness of the clusters was confirmed from various perspectives.

It must be also add that the research made by George Matysiak was the first quantitively classify European unlisted funds. And what more, the research by the author, took the impact of smoothing on UCREF investment performance into account.

Finally, regarding the practical results of the doctorate dissertation, the author states that using off-the-shelf software together with a fund's ex ante characteristics, new funds can be easily assigned to an appropriate risk cluster. It will allows potential investors to establish a find's risk class with confidence. Therefore potential investors can use the tested classification system to assess the type of risk class they intend to invest in. This is also very important achievement and practical suggestion from the author to the investors on the UCREF market.

## 4. Conclusion

In light of the above presented evaluation of the reviewed doctoral dissertation of George Matysiak, `I consider it reasonable to conclude that the dissertation submitted for review meets the requirements for doctoral dissertations in the applicable regulations (the Law on Academic Degrees and Academic Title and in connection with the introductory provisions of the Law on Higher Education (Dz.U. of 2018, item 1669), and may be admitted for public defence.

Warsaw, 3 August 2023