

REVIEW

by Prof. PhD Stanislav Dimitrov

professor at the University of Insurance and Finance, Bulgaria

of a dissertation for the award of the scientific degree of "Doctor of Science"

in the Field of Higher Education 3. Social, Economic and Legal Sciences

Professional

area

3.8.

Economics

Author: Prof. PhD Andrey Boyanov Zahariev

Topic: Dwellings revalorization in Bulgaria: factors, models, trends

1. General description of the materials presented

By order No. 322 of 24.07.2026 of the Rector of the University of Insurance and Finance, Corresponding Member Prof. DoS Boris Velchev, I am appointed as a member of the scientific jury for ensuring a procedure for the defense of a dissertation on the topic "Dwellings revalorization in Bulgaria: factors, models, trends" for the acquisition of the scientific degree "Doctor of Sciences" in the Field of Higher Education 3. Social, Economic and Legal Sciences, Professional area 3.8. Economics. The author of the dissertation is Prof. PhD Andrey Boyanov Zahariev - candidate at the Department of Finance and Insurance.

The materials submitted by Prof. PhD Andrey Zahariev include the following:

1. Dissertation - in Bulgarian
2. Abstract - in Bulgarian and English
3. Declaration of originality
4. Reference to the scientometric indicators for "Doctor of Sciences"
5. Reference to the fulfillment of the minimum national requirements for acquiring the scientific degree "Doctor of Sciences" in the professional field 3.8 Economics
6. Reference to the nomenclature of author's publications on the topic of the dissertation work

7. Compliance with the requirements of the Regulations for the implementation of the Law on the Development of the Scientific Staff in the Republic of Bulgaria for acquiring the scientific degree "Doctor of Sciences" in the professional field 3.8 "Economics"
8. List of publications on the topic of the dissertation work
9. Publications under the procedure
10. Summaries of publications under the procedure
11. List of all publications, if it differs from the list under item 8
12. List of citations
13. Author reference for contributions to the dissertation
14. Copies of publications

The candidate Prof. PhD Andrey Zahariev has submitted a total of 32 publications, of which 4 articles and reports published in scientific publications, referenced and indexed in world-renowned databases of scientific information, 22 articles and reports published in non-refereed journals with scientific review or published in edited collective volumes, 2 studies published in scientific publications, referenced and indexed in world-renowned databases of scientific information and 4 studies published in non-refereed journals with scientific review.

2. Brief biographical data about the candidate

Based on the brief CV submitted by the candidate, it can be concluded that Prof. PhD Andrey Zahariev has significant experience of over 27 years in the field of practice, in scientific and teaching activities, as well as in the administration of scientific and educational organizations.

3. Relevance of the topic and appropriateness of the set goals and objectives

The research of Prof. PhD Andrey Zahariev is aimed at analyzing the factors, mechanisms and trends determining the dynamics of housing (dwellings) prices in Bulgaria. The analysis is through the prism of economic convergence, financial integration and the country's accession to the eurozone. The author points out one of the main reasons for the research, namely the lack of empirical models that systematically test which of the determinants of housing prices retain explanatory power in the conditions of prolonged currency convergence.

In the presented dissertation, Prof. Andrey Zahariev aims to conduct an in-depth study of *"...the process of housing revaluation in Bulgaria as an EU member state, through analysis and assessment of growth factors, modeling the dynamics of change and acceleration of price*

adjustments”. The leading research thesis of the work is “...in the process of cohesion of the country and catch-up growth of the economy, Bulgaria as an EU member state achieves housing revaluation, measured by the general housing price index and the composite sub-indices, which is due to the influence of factors unique to the country, supported by the accelerating influence of the country's accession to the Eurozone”.

What is new in the study of the issue under consideration is the filling of the identified gap, namely the lack of empirical models that systematically test which of the determinants of housing prices retain explanatory power in conditions of prolonged currency convergence.

The issue under consideration is relevant, given the role of housing in the wealth of individuals, the significant increase in housing prices over the last 12 years, the importance of housing construction for the country's economy, the value of rents, Bulgaria's accession to the Eurozone, the exchange of leva for euros, household savings and investments, the accessibility of housing to households, the dynamics of demand and supply, the role of the shadow economy in the housing market, the place of digital intermediary platforms, etc. I believe that Prof. Andrey Zahariev's research of the issue is a significant contribution to theory and practice.

4. Knowledge of the analysed problem

The candidate Prof. PhD Andrey Zahariev demonstrated extremely good knowledge of the researched issues.

5. Research methodology

The methods used in conducting the study are listed on page 30 of the dissertation. The methods used correspond to the objectives of the study. The methods used were induction and deduction, comparative analysis, predictor clustering, descriptive statistics, regression-correlation modeling, ADF, PP & KPSS stationarity tests, autoregressive integrated moving averages with exogenous predictors (ARIMAX) models, Ljung–Box, Shapiro–Wilk, Kolmogorov–Smirnov, ARCH LM tests, diagnostic checks for normality and robustness of the models.

6. Characteristics and evaluation of the dissertation work

The dissertation consists of 390 pages. The main text of the dissertation is 328 pages, to which 30 pages of appendices have been added. The text contains 42 figures and 47 tables. The literature used covers a total of 316 sources, including 47 in Cyrillic and 269 in Latin.

The structure of the dissertation contains a list of abbreviations, a list of figures, a list of tables, an introduction, three chapters, a conclusion, appendices, a bibliography, a reference to the nomenclature of author's publications on the topic of the dissertation, compliance with the requirements of the regulations for the implementation of the law on the development of the scientific staff in the Republic of Bulgaria for the acquisition of the scientific degree "Doctor of Sciences" in the professional field 3.8 "Economics", scientometric indicators for the procedure for the acquisition of the scientific degree "Doctor of Sciences" in the professional field 3.8 "Economics" and a declaration of originality.

The introduction of the dissertation clearly and specifically formulates the relevance, object, subject, goal, leading research thesis, three working hypotheses, tasks and methods. The formulation of limitations of the research is positive.

The title of Chapter One is "Critical assessment of the factors for housing revaluation – theoretical and applied findings". The volume is 68 pages. It is structured in 8 points. In this part of the study, a critical assessment of the factors for housing revaluation is carried out with an emphasis on theoretical and applied findings. The critical analysis is aimed at deriving trends in thematic studies on housing prices, as well as specifically for the Bulgarian housing market. The chronological selection of the evolution in the consideration of the issue by Bulgarian authors is positive.

The analysis in Chapter Two focuses on studying the factors for housing revaluation in Bulgaria. The volume is 126 pages. It is structured in 7 points. In this part of the dissertation, the author justifies the grouping of determinants of housing prices. The author successfully integrates macroeconomic, financial, sectoral and infrastructure determinants into a single analytical framework. Greater attention could be paid to the interrelationships between the share of the shadow economy, respectively the unofficial income and savings of the population and the dynamics of housing prices. Given the tasks of the study, it is worth analyzing the interrelationships between the cash flows of Bulgarians living and working abroad entering the country and the dynamics of housing prices. Also of interest is the dynamics of the number of homeowners and housing prices. It would be positive to seek a comparison of the above three factors with other EU member states, such as Poland and Romania, for example. In this chapter, a primary regression-correlation analysis and modeling with parallel assessment using descriptive statistics tools of the influence of determinants on three main measures of housing prices in Bulgaria – the general housing price index (GHPI), the price index of existing homes (HPIED and the price index of newly built homes (HPIND) – has been conducted. The analysis of international trends in the housing sector in the EU and the place of Bulgaria is positive for the study.

In Chapter Three, an empirical study of the revaluation of housing in Bulgaria in the period 2015-2025 has been conducted. The volume is 93 pages. It is structured in 4 points. The author has substantiated a methodological approach for a basic model of autoregressive integrated moving average with exogenous predictors (ARIMAX) for assessing the revaluation of housing in Bulgaria. In this part of the dissertation, the results of the analysis, the statistical characteristics of the ARIMAX models for the three indexes, the estimates of the individual factors. Testing of alternative models was carried out to prove the optimal characteristics of the selected ARIMAX models in terms of parameters and errors that describe the change in the change in the revaluation of housing prices in Bulgaria.

The conclusion corresponds to the analysis in the dissertation.

The structure of the work is appropriately chosen. The content corresponds to the topics of the individual parts. There is a certain imbalance in the volume of the three chapters, but this does not detract from the merits of the work.

A positive moment of the dissertation is the fact that after each chapter the main conclusions reached by the author in the corresponding part are formulated.

Authors and sources of information are correctly cited in the text.

The researched data are up-to-date.

7. Contributions and significance of the dissertation for science and practice

On pages 318-326 of the dissertation and on page 42 of the Abstract, Prof. Zahariev indicates the following as scientific and applied contributions of the dissertation work:

1. Critical synthesis and multi-criteria systematization of the findings in the indexed scientific periodicals on the determinants of housing prices in an international context and chronological aspect.
2. Chronological periodization of the methodological evolution in housing price research and author's systematization of scientific findings on the topic by Bulgarian authors in the indexed scientific periodicals.
3. Theoretical framework for the positioning of housing in the multi-layered structure of national wealth and household wealth.
4. Author's methodology for parallel parametric estimation of single regression dependencies through alpha-beta comparative analysis for assessing the change in housing price indices in Bulgaria.
5. Empirical verification of the hierarchy of determinants of housing prices in Bulgaria through a systematized multi-group regression-correlation framework.

6. Positioning Bulgaria in the European context of housing appreciation and identifying the institutional factors of the accelerated revaluation of the housing stock.

7. Verified five-step methodological procedure for ARIMAX modeling of the dynamics of housing revaluation.

8. Derived and empirically verified sector-specific ARIMAX models for estimating the change in prices of new housing based on first-differentiated data, as well as for identification and metrification of the driving forces of the acceleration of the change in prices of old housing and the housing stock in general in Bulgaria based on second-differentiated data.

9. Identifying the sector-specific determinants of acceleration of housing revaluation in Bulgaria and empirically rejecting aggregate macroeconomic indicators as statistically significant price predictors.

I fully accept the contributions formulated by the author. They correspond to the research in the dissertation.

8. Assessment of dissertation publications

For publications on the dissertation work, there are a total of 32 publications, of which 4 articles and reports published in scientific publications, referenced and indexed in world-renowned databases of scientific information, 22 articles and reports published in non-refereed journals with scientific review or published in edited collective volumes, 2 studies published in scientific publications, referenced and indexed in world-renowned databases of scientific information and 4 studies published in non-refereed journals with scientific review. The publications show systematic and in-depth research by the candidate Prof. PhD Andrey Zahariev in areas related to the researched issues in the dissertation work.

9. Assessment of compliance with minimum national requirements

The candidate Prof. PhD Andrey Zahariev fully meets the minimum national requirements for acquiring the scientific degree of "Doctor of Sciences".

Based on the critical review of the dissertation work on the topic "Dwellings revalorization in Bulgaria: Factors, Models, Trends", developed by Prof. PhD Andrey Zahariev, I have reason to conclude that the study meets the minimum requirements of the Act on the Development of Academic Staff in the Republic of Bulgaria.

10. Personal participation of the candidate

The authorial participation of the candidate, Prof. PhD Andrey Zahariev, is clearly evident in the presented dissertation and publications.

11. Abstract

The abstract fully meets the requirements for this type of work.

12. Critical remarks and recommendations

I have no significant comments or recommendations for the dissertation. Some recommendations to the author are listed in item 6 above.

13. Personal impressions

I have personal impressions of the candidate Prof. PhD Andrey Zahariev. My impressions are from the candidate's work at the University of Insurance and Finance as a lecturer and researcher, member of the Department of Finance and Insurance. My impressions of the candidate are entirely positive.

14. Recommendations for future use of the dissertation contributions and results

My recommendations are to deepen research into this socially and economically significant issue.

CONCLUSION

The dissertation work contains scientific, scientifically-applied and applied results that represent an original contribution to science and meet all the requirements of the Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB) and the Regulations for the Implementation of ZRASRB. The presented materials and dissertation results fully comply with the specific requirements of the Rules for the Conditions and Procedure for Acquiring the Scientific Degree “Doctor of Sciences” at the University of Insurance and Finance.

The dissertation work meets the high requirements for combining theory, practical research and the conclusions arising from this. The work contains theoretical generalizations and solutions to

major scientific or scientifically-applied problems that correspond to modern achievements and represent a significant and original contribution to science.

Due to the above, I confidently give my positive assessment of the conducted research, presented by the above-reviewed dissertation, abstract, achieved results and contributions, and I propose to the esteemed scientific jury to award the scientific degree "Doctor of Sciences" to Prof. PhD Andrey Zahariev in the Field of Higher Education 3. Social, Economic and Legal Sciences; Professional Field 3. 8. Economics.

11.08.2026

Reviewer:
(prof. PhD Stanislav Dimitrov)