

**To the University of Insurance and Finance
Department of Finance and Insurance
1 Gusla St., Sofia**

OPINION

By Prof. Dr. Reneta Dimitrova, Doctor of Economics, Professional Field 3.8 "Economics", Department of Economics, New Bulgarian University (NBU)

on a dissertation for the award of the scientific degree "Doctor of Sciences" in the Field of Higher Education 3. Social, Economic and Legal Sciences, Professional Field 3.8. Economics

Author: Prof. Dr. Andrey Boyanov Zahariev

Topic: "Revaluation of Housing in Bulgaria: Factors, Models, Trends"

1. General description of the submitted materials

By Order No. 322 of 24.07.2026 of the Rector of the University of Insurance and Finance, Corresponding Member Prof. Dr. Boris Velchev, I was assigned to participate in the scientific jury for conducting a procedure for the defense of a dissertation on the topic "Revaluation of housing in Bulgaria: factors, models, trends" for the award of the scientific degree "Doctor of Sciences" in the Field of Higher Education 3. Social, Economic and Legal Sciences, Professional Direction 3.8. Economics. The author of the dissertation, Prof. Dr. Andrey Boyanov Zahariev, is a full-time lecturer in the Department of Finance and Insurance at the University of Insurance. After a decision was made by the scientific jury at its first meeting, I was assigned to prepare a statement on the procedure.

The opinion evaluates the dissertation work, prepared in Bulgarian in a volume of 390 pages and an accompanying set of materials containing the full required set of documents according to the procedure inventory.

In support of the procedure, the candidate presents a total of 32 publications on the topic of the dissertation, published in the period 2012–2026, which are distributed according to the individual indicators of the ZRASRB as follows: indicator G6 includes 4 articles published in publications, referenced and indexed in Scopus/Web of Science; indicator G7 includes 22 articles and reports in non-referenced publications and collections; indicator G8 is formed by 2 studies published in referenced and indexed in Scopus/Web of Science publications; and indicator G9 consists of 4 studies in non-referenced publications.

2. Brief biographical data of the candidate

Prof. Dr. Andrey Boyanov Zahariev was born in 1971. He completed his higher education in the period 1989–1994 with the "Master's" qualification at the "D. A. Tsenov" University of Applied Sciences - Svishtov, majoring in "Economics and Industrial Management". His academic path began in 1999, when he acquired the educational and scientific degree "Doctor" in the specialty 05.02.05 "Finance, Money Circulation, Credit and Insurance", thereby fulfilling the condition under Art. 12, para. 1 of the Law on the State Administration of the Republic of Bulgaria; he successively passed through the academic positions of assistant (1999), chief assistant (2000), associate professor (2001) and professor (since 10.12.2012) at the "D. A. Tsenov" University of Applied Sciences - Svishtov. Since November 2024, he has been a part-time professor, and since June 2025, a full-time professor at the University of Insurance and Finance, where he lectures on "Fundamentals of Finance and Economic Theories", "Financial Risk Management", "Portfolio Management", "Business Planning" and "European Projects and Investments". In addition to his teaching activities, he

also has impressive management experience - he has held the positions of coordinator and director of distance and master's education units, vice-rector (2007–2010), head of the Department of Finance and Credit (2012–2020) and dean of the Faculty of Finance (2020–2024) at the D. A. Tsenov University of Insurance and Finance. His contributions have been awarded the honorary titles Doctor Honoris Causa of the Donetsk National University "Vasyl Stus", Ukraine (2017) and Professor Honorificus of the Artifex University, Bucharest (2024). He has participated in 37 national and international projects. Prof. Zahariev demonstrates a solid scientometric portfolio - over 280 publications registered in NACID, h-index 8 in the Scopus database (supported by 12 articles and over 100 citations) and h-index 5 in the Web of Science database (supported by 9 articles and 50 citations). As a scientific supervisor, he has assisted in the successful defense of 18 doctoral students before joining UZF, and is currently supervising four more - from Bulgaria (project doctoral studies), Kazakhstan and Albania.

3. Characteristics and evaluation of the dissertation work

The topic on which the dissertation research is focused has undeniable relevance and public significance, as it analyzes the process of housing revaluation in Bulgaria in the context of the country's accession to the eurozone from January 1, 2026 - the culmination of a nearly thirty-year process of currency convergence that began with the introduction of the currency board in 1997. The author convincingly defends the existence of a research deficit resulting from the lack of systematized empirical models for the durability of housing price determinants in conditions of prolonged currency convergence, and the goal of the work - studying the growth factors and modeling the dynamics and rate of acceleration of price changes in the period 2015–2025 - logically unfolds in three correctly formulated working hypotheses and three research tasks corresponding to the three chapters of the work. The depth of the analysis is evident from the impressive volume of 316 sources (269 in Latin and 47 in Cyrillic), systematized in five thematic areas in a chronological scope from 1990 to the present, combined with an extensive empirical set of 54 predictors, distributed in five thematic groups. The applied methodological tools combine induction and deduction, comparative analysis, clustering of predictors, descriptive statistics, regression-correlation modeling, stationarity tests, autoregressive integrated models with exogenous variables (ARIMAX), as well as diagnostic tests, with a particularly significant contribution being the original five-step procedure for ARIMAX modeling, specially developed for analyzing the acceleration of revaluation in limited-volume quarterly samples – the chosen methodology is appropriate, solidly justified and fully consistent with the research tasks set.

In terms of structure, the work contains an introduction with a precisely outlined relevance, object, subject, thesis, hypotheses, goal, tasks, methodology and limitations, followed by three chapters: the first introduces an original multi-criteria systematization of research into five thematic areas and a five-period periodization of the academic debate on housing prices from 1990 to the present; the second develops the empirical analysis of the fifty-four predictors using descriptive statistics, correlation analysis and the author's alpha-beta comparative method, covering 41 quarters (2015Q4–2025Q4); the third, representing the core of the dissertation, constructs and verifies three ARIMAX models – for GHPI, for HPIED and for HPIND. All three models are tested with the most advanced diagnostic checks, leading to the conclusion of a reduced influence of classical macroeconomic aggregates at the expense of sector-specific predictors. The final part summarizes the achievements by drawing out scientific contributions and directions for future research.

I can conclude that the overall text is distinguished by precision, a correct and consistent scientific style, as well as a logical interrelationship between the structural elements, illustrated with rich illustrative material.

4. Contributions and significance of the work for science and practice

The candidate formulates and presents a total of nine contributions of the dissertation work, having both theoretical and practical-applied value:

1) An original multi-criteria analytical framework for a critical synthesis of the academic literature on the factors of housing pricing has been developed, uniting five thematically focused groups.

2) An original five-period chronological periodization of the academic analysis of housing prices from 1990 to the present day and an author's systematization of the scientific contributions to the housing market in Bulgaria have been proposed.

3) An original theoretical framework has been developed and verified, positioning housing in the five-component systematization of national wealth and in its three-layer structure by economic agents.

4) An original methodological approach for simultaneous parametric estimation of two alternative single regression models (alpha-beta comparative analysis) was developed and verified, applied to 54 predictors and three dependent variables.

5) A complex regression-correlation framework was built and verified, systematizing 54 predictors into five thematic groups, and the empirical hierarchy of their impact on three measures of the housing price index was established.

6) Based on a comparative analysis of the HPI for all 27 EU member states, it was established that the growth of housing prices in Bulgaria is 2.2 times higher than the average for the EU27, and the specific institutional factors for this were identified.

7) An original five-step methodological procedure for ARIMAX modeling was developed and applied, adapted to study the acceleration of revaluation with small samples of quarterly data.

8) For the first time in the Bulgarian scientific literature, three independent ARIMAX models have been constructed and verified for the three dimensions of the housing price index – GHPI, HPIED and HPIND.

9) The sector-specific determinants of the accelerated revaluation of housing in Bulgaria have been identified, while aggregated macroeconomic indicators have been rejected as statistically significant price predictors.

The above-mentioned contributions rank the development among the scientific studies that expand and build on the existing knowledge in the field of household wealth dynamics, and hence national wealth (scientifically justified positioning of housing in its structure), the regulation and monitoring of financial stability at the macro level under the new currency regime, as well as the development of sectoral policies by the competent institutions. From a scientific point of view, the significance of the contributions is manifested primarily in the author's constructed theoretical and methodological framework for the study of housing wealth, in which a prominent place is occupied by the pioneering verified ARIMAX models of the housing price index for the Bulgarian scientific literature, derived by Prof. Zahariev through an original five-step procedure; to this should be added the comprehensive study of the scientific literature on the issue carried out in the first chapter. From a practical point of view, the contributions of the study have a wide range of significant manifestations, among which the grouping and quantitative measurement of the impact of 54 determinants, the econometric rejection of aggregated macroeconomic indicators as predictors of housing revaluation in the conditions of transition to the new currency regime, and the derivation of national-sector-specific predictors for the three ARIMAX models occupy a special place.

5. Assessment of publications on the dissertation work

From the point of view of the place of publication, six of the total 32 publications (18.75%) are published in refereed and indexed journals in Scopus/WoS, while five publications (15.6%) are reports from international scientific conferences held outside the

country – in Chisinau (Moldova), Nizhyn (Ukraine), Zagreb and Varaždin (Croatia) and Bucharest (Romania). Three publications (9.4%) are articles in foreign (non-Bulgarian) refereed journals, including two materials in a Ukrainian edition and one publication in VTU. The most numerous is the group of ten reports (31.25%), presented at international scientific conferences held on Bulgarian territory – predominantly the Svishtov anniversary and international scientific and practical conferences of the SA "D. A. Tsenov", the conference of young scientists of the UNWE and the forum of the IRI at the Bulgarian Academy of Sciences. The remaining publications are distributed between four reports (12.5%) at national conferences, sessions and seminars and four studies (12.5%) published in university scientific publications - Almanac and Yearbook.

In terms of the language of publication, a relatively balanced distribution is observed - fifteen of the publications (46.9%) are in English, and seventeen (53.1%) - in Bulgarian, with a clear correlation between the chosen language and the place of printing: all studies and articles in refereed and indexed journals (indicators G6 and G8) are published entirely in English, while studies in university publications (G9) are mainly in Bulgarian, as are the majority of reports at conferences held in Bulgaria.

As for the authorship, twelve publications (37.5%) are the work of the candidate alone, eight (25.0%) are prepared with one co-author (two authors in total), four (12.5%) – with two co-authors (three authors in total), and the remaining eight (25.0%) unite three or more co-authors (four or more authors in total). It is indicative that the four publications from indicator G6, published in the highest-referenced journals, as well as the two studies from indicator G8, represent entirely collective works with an international composition of the author team (between four and seven co-authors), while the candidate's independent publications (twelve in number, over one third of the entire list) predominate among the studies in university publications and reports at national and international conferences held in Bulgaria. This distribution testifies both to the candidate's clearly expressed own contribution to the research issue and to his active participation in international research teams, namely in the publications with the highest international visibility.

The candidate's publications impress with a decidedly international dimension and quality, with 6 out of a total of 32 publications (18.75%) finding a place in the publications indexed in Scopus and/or Web of Science - the most authoritative and demanding scientometric databases worldwide. The fact that as many as 5 of them (83%) reach the prestigious Q1 ranking is extremely indicative. With these data, the candidate establishes himself among the authors whose refereed production is concentrated in the most highly rated publications in the relevant scientific fields - a result that far exceeds the usual expectations for such a procedure. A particularly vivid testimony to the scientific maturity and prospects of the research is the fact that it is precisely the latest developments on the topic of the dissertation (2025–2026, dedicated to the housing market and the revaluation of real estate in Bulgaria) that have been published in Q1 issues in Scopus & Web of Science, which unequivocally confirms the growing international recognition of the author and categorically testifies to the high relevance and scientific value of the research topic.

6. Assessment of the fulfillment of the minimum national requirements

According to the submitted scientometric report and the list of publications and citations, the minimum national requirements for acquiring the scientific degree "Doctor of Sciences" under Art. 12 of the Law on the State of the Republic of Bulgaria. These citations and publications can be checked in the personal profiles of the candidate in NACID, Scopus & Web of Science, whereby I confirm their full recognition for the purposes of the procedure. Based on the materials provided, I believe that the candidate fully meets the requirements of Art. 12, para. 4 of the Law on the Promotion of Scientific Research of the Republic of

Bulgaria, as the dissertation work of Prof. Dr. Andrey Zahariev contains theoretical summaries and solutions to major scientific or scientifically-applied problems, corresponding to modern achievements in science.

7. Abstract

Within its 50 pages, the abstract manages to combine brevity with comprehensiveness, encompassing in a synthesized form all the key components of the dissertation research – from the justification of the topicality of the topic, through the object, subject, thesis and working hypotheses, to the goal, tasks, methodological apparatus and the outlined restrictive framework of the research. No less essential is the presence of a concise but meaningful summary of the three chapters, accompanied by clearly stated scientific and applied scientific contributions, outlined prospects for future research, as well as a comprehensive reference to the publications and achieved scientometric indicators of the candidate. It is precisely this precision and completeness that gives reason to claim that the abstract faithfully and convincingly reflects both the actual content and the real contribution of the dissertation work.

8. Critical remarks and recommendations

The presented dissertation work is distinguished by its undoubted scientific value and convincingly confirms the author's profound research skills, and my note is rather a perspective direction for reflection - regarding the large percentage of empty and unoccupied housing in the housing stock in the capital Sofia and the other largest cities in the country - which can be discussed at the public defense and thus further enrich the excellent impressions of the indisputable scientific and scientific-applied achievements of the work.

CONCLUSION

The dissertation submitted under this procedure by Prof. Dr. Andrey Zahariev on the topic "Revaluation of Housing in Bulgaria: Factors, Models, Trends" contains original scientific, scientifically-applied and applied contributions. The work meets all the requirements of the Act on the Development of the Academic Staff in the Republic of Bulgaria (ADABRB), the Regulations for its implementation, as well as 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 shows that the candidate Prof. Dr. Andrey Zahariev possesses in-depth theoretical knowledge and professional skills in Professional Field 3.8. Economics, demonstrating qualities and skills for independent conduct of scientific research.

Based on 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. Dr. Andrey Boyanov Zahariev in the Field of Higher Education 3. Social, Economic and Legal Sciences, Professional Field 3.8. Economics;

21.08.2026

Prepared by: Assoc. Prof. Dr. Reneta Dimitrova