

ACADEMIC REVIEW

regarding: competition for the academic position "Associate Professor" in the Faculty of Economics at SU "St. Kliment Ohridski", professional field 3.8 Economics (Statistics, econometrics and economic modeling - in Bulgarian and English)

by Prof. Dr. Stefan Hristov Petranov, guest lecturer at the Department of Economics at Sofia University "St. Kliment Ohridski", member of the Scientific Jury for the competition

1. COMPETITION INFORMATION

The competition was announced for the needs of the Department of Statistics and Econometrics at the Faculty of Economics, Sofia University "St. Kliment Ohridski" and was published in the Official State Gazette, no 30 of 15/04/2022. I participate as a member of the Scientific Jury for the competition according to Order RD 38-277/06/06/2022 of The Rector of Sofia University "St. Kliment Ohridski" (later SU).

2. BRIEF INFORMATION ABOUT THE CANDIDATES IN THE COMPETITION

One candidate participated in the competition - Dr. Andrey Andreev Vasilev. For the competition, he submitted a set of materials, including the following documents:

1. CV;
2. Higher education diploma;
3. Diploma for educational and scientific degree "doctor";
4. Teaching load report;
5. Certificate of work experience;
6. List of all scientific publications;
7. List of scientific publications submitted for participation in the competition;
8. Summaries of peer-reviewed publications;
9. Reference to original scientific contributions;
10. Reference on the contribution nature of the works;
11. Reference for citations;
12. Reference for additional indicators under Art. 112, para. 2 of the Regulations of the SU;

13. Medical certificate;
14. Criminal record certificate;
15. Copies of scientific works submitted for participation in the competition;
16. Copy of the competition announcement in the State Gazette;
17. Reference for the fulfillment of the quantitative criteria for occupying the academic position "Associate Professor" in the Faculty of Economics of SU "St. Kliment Ohridski".

From the submitted documents, it can be seen that the candidate has a higher education from the University of National and World Economy with a major in International Economic Relations and a master's degree in applied mathematics from SU "St. Kliment Ohridski" with a master's thesis on "Non-parametric Bayes estimation of the spectral density of stationary random processes". He also has a PhD in Mathematical Modeling and Applied Mathematics from the SU St. Kliment Ohridski" with the thesis topic "Mathematical models of spatial economic phenomena".

Dr. Vasilev's career development is related to various professional positions and passes through the Agency for Economic Analysis and Forecasts, Raiffeisen Bank, the Bulgarian National Bank, Dil Ventures OOD, and in all the positions he held, his responsibilities were related to scientific or scientific and applied research. Currently, he is the head of the "Research and Development" unit at Dil Analytics OOD and a part-time lecturer at SU "St. Kliment Ohridski".

3. FULFILLMENT OF THE REQUIREMENTS FOR THE ACADEMIC POSITION

From the submitted documentation for the competition, it can be seen that the candidate has the educational and scientific degree "doctor" and has been a part-time teacher for more than two years at Sofia University. In addition, he has presented a monographic work - "Strategic models of trade under the conditions of protectionism". I am not aware of any evidence of plagiarism in his works.

Based on the submitted publications and the other documents submitted for the competition, as well as according to the current scientometric indicators, Dr.

Vassilev has 727 points and thus he fulfills the minimum national requirements for holding the position of "associate professor" in area 3 - Social, economic and legal sciences, according to Art. 2b of The Law on the Development of the Academic Staff in the Republic of Bulgaria (ZRASRB).

The above facts confirm that the applicant meets the requirements of Art. 105 par. 1 items 1-5 of the Regulations on the terms and conditions for acquiring scientific degrees and occupying academic positions at SU "St. Kliment Ohridski" (PURPNSZAD).

4. EVALUATION OF THE EDUCATIONAL AND TEACHING ACTIVITY

Currently, Dr. Andrey Vasilev is a part-time teacher at SU "St. Kliment Ohridski" (since 2003), where he delivers lectures on "Econometrics", "Macroeconomics I", "Macroeconomics II" (Faculty of Mathematics and Informatics) and "Statistical and Mathematical Methods", "Applied Economic Modeling with Python ", "Applied Econometrics II", "Macroeconomic Modeling" and "Microeconomic Modeling" (Faculty of Economics).

In addition, Dr. Vassilev presents a set of different educational materials for the competition. The list of publications includes the textbook "Introduction to Macroeconomics" (University Publishing House "St. Kliment Ohridski") and a software tool for interactive learning "Model of a small open economy under the conditions of a currency board" (Publishing Complex-UNSS). Both publications are co-authored. Also, the reference for additional indicators under Art. 112, para. 2 shows that Dr. Vassilev has independently developed two sites with educational materials and six repositories with educational materials for the disciplines he teaches. I think this is good practice and very useful for students.

The above facts present Dr. Andrey Vasilev as an established teacher in the field of economic sciences, with sufficient experience, both in fundamental and

specialized economic disciplines. His teaching experience and teaching materials fully correspond to the profile of the present competition.

5. CHARACTERISTICS OF THE PRESENTED SCIENTIFIC PAPERS

The applicant has submitted a complete list of his publications, as well as a list of the publications submitted for review in the present competition. The second list includes 34 publications and covers:

- Monographs - 2;
- Articles published in scientific journals, referenced and indexed in world-known databases with scientific information - 7;
- Articles published in non-refereed peer-reviewed journals or published in edited collective volumes – 11;
- Studies published in non-refereed peer-reviewed journals or published in edited collective volumes – 13;
- University textbook – 1

The number and total volume of scientific works submitted for review is significant, but more important is their quality. It is worth noting that the presented works have been published in various and authoritative Bulgarian and international publications. Eight of the publications are in Bulgarian, and twenty-six are in English, which indicates that the candidate's works are evaluated by a wide range of specialists in various institutions, in the country and abroad. The topics under study in the presented scientific production correspond completely to the profile of the present competition.

In general, the methodology used in Dr. Vassilev's published works is adequate and meets the highest scientific standards. In his publications, the author demonstrates an excellent command of statistical and econometric apparatus, through which he substantiates his theses with arguments.

Dr. Vassilev's publications cover a wide field in economic science - they deal with both theoretical and applied issues, and from the point of view of the object of research, they can be grouped into four areas.

The first area is the study of international trade. Publications that belong to this group - 2, 4, 20, 22, 2¹. The main monographic work of the author - "Strategic models of trade under the conditions of protectionism" falls here, as well. In this group of works, Dr. Vasilev examines commercial relationships based on original models of varying degrees of complexity developed by him. Models of trade between two countries and between more than two countries, models with a deterministic nature and with stochastic elements, as well as with different options for describing the supply side are considered. The analyzes in this field are focused on the possibilities for equilibrium of the system, as well as the formation of price dynamics under the considered conditions.

The main monographic work, in turn, presents an overview of the scientific literature related to this field, which allows to clearly highlight the similarities and differences of the author's research with existing publications. It systematizes and summarizes the research in the articles published by the author, but also adds new results in the field, building a unified framework for the analysis of consumer protection.

The second field in Dr. Vassilev's works is macroeconomic analysis - this group includes publications numbered 1, 9, 12, 14, 17, 19, 21, 24, 29, 31, 32. In these publications, a wide range of problems of the Bulgarian economy, as well as of the EU economy are considered. Based on the apparatus of models of a small open economy, the author has analyzed the functioning of an economy with a currency board that is part of a currency union. Also, he has proposed an approach for introducing a currency board in the formulation of a dynamic stochastic model of general equilibrium, which is of fundamental interest from the point of view of

¹The numbering is according to the list of publications presented for the competition.

the specifics of the Bulgarian economy. Through this apparatus, the reactions of the economic system as a result of various possible shocks were also investigated.

In other publications, Dr. Vasilev has investigated issues of exchange rate, inflation, unemployment, and the volume of output in Bulgaria. A basic dynamic model has been developed for determining the equilibrium trajectory of the nominal exchange rate for a given time horizon, and consequences for the development of the competitiveness of the Bulgarian economy with a view to reaching equilibrium have been derived. Using a model with a phase-space representation, estimated with Bayesian methods with quarterly data from 1999 to 2015, the cyclical development of unemployment and output was investigated and the main factors for inflation during the cited period were identified.

Also in this group of publications, issues related to the assessment of the impact at the macroeconomic level of the introduction of various measures aimed at removing gaps and barriers to the efficient functioning of the EU economy in various aspects are considered. The opportunity cost, which arises as a consequence of the lack of common, agreed policy measures at the European level in the fields of artificial intelligence and digital transformation, is analyzed.

The third field in Dr. Vassilev's research is the labor market, which includes publications numbered 15, 16, 25, 26, 27, 34. They discuss the main challenges facing the labor market in Bulgaria in the medium and long term and analyze possible solutions to overcome the recent negative trends. The object of research are the factors influencing the demand and supply of labor, the existing and expected imbalances in the labor market in educational and regional aspects, as well as in economic activities. The characteristics and dynamics of wages by economic sectors, educational degrees and professions are also examined. Explanations were sought for individuals' decisions to participate or not, respectively, in the labor force.

The last, *fourth field* of research work is in the field of spatial economics. Publications numbered 5, 6, 7, 8, 10 fall here. Publications in this field explore

different variants of a model in which the decisions of an economic agent on consumption and savings are supplemented with the possibility of moving to different locations, taking into account possible change of income and related transaction costs. In this way, the dichotomous model for making decisions regarding consumption is enriched and becomes more adequate for the conditions of open labor markets. A systematic exposition of the formulation of the problem for optimal behavior is proposed, the existence of a solution is analyzed, the necessary conditions for optimality and their properties are derived.

6. ASSESSMENT OF THE BASIC SCIENTIFIC AND SCIENTIFIC-APPLIED CONTRIBUTIONS

Dr. Vassilev's publications include a number of scientific-theoretical and scientific-applied contributions. They can be identified in all the strands of his research discussed in the previous section. But above all, it should be noted that for many of the economic processes studied, Dr. Vassilev uses a formal analytical apparatus that is either original or an author's further development of an existing apparatus. Such an approach is not common in the Bulgarian economic literature and should be noted. It shows competence, research capacity and creative attitude. From this point of view, I would highlight the following as scientific-theoretical contributions:

- The developed models for a small open economy operating under the conditions of a Currency Board, taking into account the specifics of the Bulgarian economy;
- Game-theoretic models of international trade;
- The developed models considering possible changes in economic agents' location and their formalization as a problem of optimal control with continuous time;
- Proving the existence of optimal decisions for the optimal control problem in spatial economy models;
- Deriving algorithmic rules based on Lagrangian function and the proof of sufficient condition for optimality for the case of dynamic optimization tasks in discrete-time models.

Among the scientific-applied contributions, I would distinguish the following:

- The analyzes of the potential reaction of the economic system in Bulgaria to various external shocks;
- The estimates for the equilibrium nominal exchange rate for the Bulgarian Lev based on the assumptions of neutral balance of payments and pricing convergence with the reference economy;
- The analytical results with respect to the labor market - trends, imbalances between demand and supply, factors for labor force participation, effects of active labor market policies.
- The development of a technical toolkit, applicable for economic analysis .

The teaching-methodical contributions in the educational publications of Dr. Vasilev and, above all, the developed sites and repositories with educational materials should also be taken into account. Given the nature of the competition, they should also be noted.

7. KEY CRITICAL NOTES AND RECOMMENDATIONS

I have no significant critical comments to the presented materials or more generally to Dr. Vasilev's candidacy. I only allow myself to recommend that he continue in the future to combine his academic and scientific activity with practical activity, as he has succeeded so far. This combination is valuable and will be useful to his future students.

8. CONCLUSION

The scientific and teaching activity of the candidate Dr. Andrey Vasilev and his publications characterize him as a well-established scientist-economist with solid teaching and scientific experience. He combines outstanding academic qualities with experience from his work at the Agency for Economic Analysis and Forecasts, the Bulgarian National Bank and on various consulting projects. Dr. Vasilev knows the development of economic processes in the country, skilfully

analyzes these processes with a suitable analytical apparatus and knows how to generate ideas and proposals for finding solutions to current economic problems.

The candidate's participation in the educational process is on a high scientific level. The courses taught by him so far are in accordance with modern requirements, reflect the current content of the taught material and fully correspond to the profile of the present competition.

On the basis of the arguments presented above, as a summary, I consider that the teaching experience of Dr. Vassilev, as well as the scientific contributions contained in his publications, 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 the ZRASRB. The submitted materials for the competition fully comply with the specific requirements of the Rules for terms and conditions for acquisition of scientific degrees and occupancy of academic positions in SU " St. Kliment Ohridski". All this gives me reason to express my *positive evaluation* of his candidacy and I recommend the members of the Scientific Jury to propose to the Faculty Council of the Faculty of Economics at SU "St. Kliment Ohridski" to choose Dr. Andrey Andreev Vasilev for the academic position of "associate professor".

18.08.2022, Sofia

Signature:

(Prof. Dr. S. Petranov)