

## **REVIEW**

**by Acad. Prof. DSc Ivan Petkov Popchev**

of application documents and scientific research,  
for the academic position **'Professor'**  
at **Plovdiv University "Paisii Hilendarski"**

3.8 Economics (Finance)

The procedure of occupying the academic position "Professor" at Plovdiv University, Faculty of Economics and Social Sciences, Department of Finance and Accounting, have been published in the State gazette, No 57/26.06.2020, as well as on the university web page. Sole applicant for the position is Assoc. Prof. Stanimir Ivanov Kabaivanov, Faculty of Economics and Social Sciences, Plovdiv University "Paisii Hilendarski".

### **1. Brief introduction of the candidate**

I have been appointed as a member of the scientific panel with order № P33 – 4134, 25.08.2020 of the Rector of Plovdiv University "Paisii Hilendarski" prof. Roumen Mladenov. Based on a report by Assoc. Prof. Margarita Rouseva and decision of the Faculty council of the Faculty of Economics and Social Sciences (FESS) 145/27.07. 2020, I have been appointed as internal member of the scientific panel.

I have received all 16 separate documents, part of the application package.

The "Act on development of the academic staff in the Republic of Bulgaria" (ADASRB), Regulations of the Act and FESS additional requirements (Protocol № 144/19.06.2020) dictate that applicants for the academic position "Professor" need to comply with certain requirements.

Art. 29. (amend. – SG 101/10) (1) Applicants to occupy the academic position of Professor must meet the following conditions:

1. to have acquired the educational and scientific degree of Doctor, which for the specialties of the regulated professions must be of the same specialty;

2. to have occupied the academic position of Associate Professor in the same or in another higher school or scientific organization for not less than two academic years or for minimum five years: a) to have been lecturers, including part-time, or members of a research and development team in the same or in another higher school or scientific organization, or b) to have practiced artistic and creative activity, or c) to have been practicing specialists and to have got proven achievements in their field;

3. to have presented a published monograph or equivalent publications in specialized scientific issued or evidences of equivalent to them artistic and creative achievements in the field of arts, which do not reproduce those presented for awarding the educational and scientific degree of Doctor and for awarding of the scientific degree of Doctor of Science and for occupying the academic position of Reader;

4. to have presented other original scientific-research works, publications, inventions, and other scientific and scientific-applicable works or artistic creative achievements, to be assessed together.

5. to meet the minimum national requirements under Art. 2b, Para. 2 and 3, respectively the requirements under Art. 2b, Para. 5;

6. to have no plagiarism proven as per the legally established order in the scientific works.

(3) The candidates shall submit a reference on the fulfillment of the minimum national requirements under Art. 2b, Para. 2 and 3, respectively the requirements under Art. 2b, Para. 5, and a reference of the original scientific contributions to which shall be attached the relevant evidence laid down in this Act, in the Regulations for its implementation and the regulations of the higher schools and of the scientific organizations.

The Faculty council of FESS has approved additional 5 requirements (II), as well as 3 extra indicators (III).

The minimal national requirements in accordance with Art. 2b, Para. 2 и 3, resp. Art. 2b, Para. 5 for 3.8 “Economics” are as follows:

№	Indicator group	Score
		Professor
1	A	50
2	B	-
3	C	100
4	D	200
5	E	100
6	F	100

## 2. General description of the application

Assoc. Prof. S. Kabaivanov, PhD complies with requirements of Art. 29. (1). 1, as he has defended a doctoral thesis in 05.02.05 „Finance, money circulation, credit and insurance” with title „Valuation of investment portfolios aided by artificial intelligence “.

Dissertation defense is certified with diploma № 34903/ 14.01.2011 issued by The Higher Attestation Commission in Bulgaria.

Assoc. Prof. S. Kabaivanov complies with requirements of Art. 29. (1). 2, as he has occupied the academic position of “associate professor” at Plovdiv University “Paisii Hilendarski” for 06 years, 3 months and 26 days as stated by Certificate № Y-200/13.07.2020, signed by the Rector of the university – prof. Roumen Mladenov, PhD.

Assoc. Prof. S. Kabaivanov, PhD complies with requirements of Art. 29. (1). 3, as he has authored a published monograph research in Bulgarian language:

Intelligent systems and self-learning algorithms for analyzing financial instruments. Issue I. Published by: Evdemonia Production, Sofia, 155 pp, 2020, Scientific reviewers: Prof. DSc Ivan Ganchev Ivanov, Assoc. Prof. Alexander Krassimirov Efremov, PhD. ISBN: 978-619-7209-37-2. References 92 papers. Freely available at: <http://www.kabaivanov.net>

The applicant has provided a “List of research papers” that can be classified as:

- 1) *Papers used for ESD „Doctor“ (PhD) – 7.*
- 2) *Papers used for Associate Professor in 3.8 “Economics” – 31.*
- 3) *Additional research papers not used for other applications – 45.*

The last item represents a set of 45 research papers that are used for current application. A brief overview of these papers reveals that:

- *1 of them is a monograph research;*
- *20 are articles and studies published in scientific journals, referenced and indexed in world-leading scientific databases:*

- *Q1 (12\_5, 12\_14);*
- *Q2 (12\_6);*
- *Q3 (12\_1, 12\_7, 12\_8, 12\_9);*
- *Q4 (12\_2);*
- *SJR (12\_10, 12\_11, 12\_12, 12\_15, 12\_16, 12\_17, 12\_18, 12\_19, 12\_20);*
- *monograph studies in Scopus (12\_3, 12\_4);*

- *24 are articles and studies published in other journals with peer-review or in collective research volumes (from 12\_31 till 12\_44);*

- 2 are being currently processed for publishing (12\_19, 12\_20);
- 3 are in Bulgarian language (monograph study, 12\_21, 12\_37);
- 2 are with a single author (monograph, 12\_21).

Inside “List of citations from world-leading databases” there are:

- Citations used for associate professor application – 5 in total, without explicitly mentioning papers that were cited;
- Citations used for this application (for “professor”) - 63 citations of 22 research papers (including 1 used for PhD and 5 used for “associate professor”).

Assoc. Prof. S. Kabaivanov also complies with the following requirements:

- Art. 29(1).4 as he has already provided 45 additional original research papers;
- Art. 29(1).5 as he fulfills in full minimal national requirements as specified in Art. 2b, Para. 2 u 3, and resp. Art. 2b, Para. 5.

In accordance with provided “Reference for compliance with national minimal requirements” (Appendix 1) of Assoc. Prof. S. Kabaivanov, PhD scores for respective groups are: A – 50, C – 100, D – 356.64, E – 780, F – 260;

- Art.29(1).6 as no plagiarism has been found or detected.

In accordance with requirements of Art. 65, Pt. 4 and 5 of Plovdiv University internal regulations, 10 points of “Self-assessment of scientific contributions” have been provided, as well as „Reference for original scientific contributions “- both accompanies with respective proofs as required by Art. 29 (3) of ADASRB. Original scientific and application-oriented contributions are 10.

#### **4. Assessment of applicant contributions**

Assuming equal share in the research presented by all co-authors, contributions of Assoc. Prof. Stanimir Kabaivanov, PhD, could be summarized as:

1. A practical and easy to use approach has been suggested to include analytical self-learning algorithms in solving demanding real-world problems. Bond indices, yield curves and improvement to stress testing have been analyzed (monograph study).
2. An approach for studying financial crises (using 2008 crisis as example) and financial contagion has been suggested (12\_14).

3. Efficient option valuation methods have been suggested (weather derivatives, double barrier option), ways to match results with assessment process of strategic management decisions, as well as use of Monte Carlo analysis for derivatives pricing (12\_1, 12\_9, 12\_12, 12\_15, 12\_16, 12\_22, 12\_26).

4. A model for assessment of innovative potential of pharmaceutical companies in Bulgaria has been developed. An approach for assessment of management of human resources, that uses stochastic processes has been suggested. (12\_11, 12\_37).

5. Crypto currency markets have been analyzed with the use of time series and machine learning algorithms (12\_2, 12\_41).

6. Hybrid deep learning and big data analysis have been used for early detection of cyber-attacks and mitigating their negative impact (12\_17, 12\_40).

The applicant has proven his educational and project experience, as associate professor in 3.8 Economics (Finance) since 2014 and as dean of the Faculty of Economics and Social Sciences since November 2015, in the following way:

1. As per “Reference for educational activities” from 24.08.2020, signed by Prof. Vanio Konsulov, PhD, Head of the Department of Finance and Accounting and Assoc. Prof. Margarita Rouseva, PhD – Deputy dean of FESS, the applicant has carried out the following activities as associate professor:

- Teaching activity – lectures and seminars in 9 different subjects. Total: 2043h in lecturing and 352h in seminars (including 120h lectures and 45h seminars for 2019/2020)
- Curriculum activity – developed 4 new courses.

2. As per applicant CV since January 2017 he is taking part as guest lecturer in a master course in Sofia University. In June 2014 he co-founded a software company – “Dronomy” Ltd.

3. Assoc. Prof. S. Kabaivanov complies with the requirements of Art. 76 from internal regulations of Plovdiv University:

- *Patents: Patent #2863 (Application #3864) – “Integrated system for control of UAVs”. Patent classes are B64C 39/02, G05D 1/10;*

- *Participation in 11 research projects, 3 of them as a leading participant and 1 as coordinator.*

- *Scientific advisor of PhD students: 1 with successful defense thesis 2017z., 1 expected defense in 2020 and 1 active PhD student at FESS.*

- Study books and materials:

- Kabaivanov S.; V. Markovska, Valuation of financial instruments in R, Sofia, Evde-  
monia production, 2019, 250 pp., ISBN 978-619-7209-30-3;
- other materials: sample teaching materials, tests and study use cases available to  
FESS students in a dedicated Moodle system.

- Other relevant details:

- member of The Econometric Society: Financial Engineering Solutions;
- guest-editor at “Algorithms” (ISSN 1999-4893) special issue “Big Data Analytics,  
Algorithms and Programming” BASEL;
- guest-editor of special issue of International Journal of Interactive Multimedia and  
Artificial Intelligence (ISSN 1989-1660);
- reviewer for Heliyon (section Heliyon Business and Economics) – a Q1 journal;
- guest editor of Entropy “Statistical Physics for Digital Economy” special issue,  
(ISSN 1095-4300) – journal in Q2, 2020;
- member of 5 scientific panels for “associate professor”, 5 for “head assistant profes-  
sor”, 10 for Doctoral thesis defense;
- member of the accreditation groups at UNWE (2) и University of Economics - Var-  
na;
- lecturer in ErasmusIP programme for 3 weeks in Iasi, Romania;
- keynote speaker in 2018 of the international scientific conference at University  
“Alexandru Ioan Cusa” – Iasi, Romania.

Assoc. Prof. S. Kabaivanov complies with all 5 additional FESS and 2 complementary re-  
quirements (Protocol № 144/ 19.06.2020), as evident from the “Reference for compliance with ad-  
ditional requirements” document.

In sum, world-leading scientific information database contain the following information re-  
garding Assoc. Prof. S. Kabaivanov:

- *Scopus: 15 cited documents, 18 citations, h-index – 3;*

- *Web of Science: 17 total publications, 13 citations without self-citations, h-index – 3;*
- *Scholar.google: citations 124, h-index 6, i10 – index 2;*
- *Mendeley: 12 publications, 18 citations, h-index 3.*

This information provides enough details for further assessment and introspection.

I know Stanimir Kabaivanov in person as a student, lecturer, researcher and expert. I am confident in his qualities and potential for future successful development and quality research output.

As a member of the scientific panel for his application for “associate professor” I have written (page 3) three critical remarks and recommendations: focus on specific research topics, submit papers in renowned journals and preparation of electronic study materials.

This review is a brief but unequivocal proof that these notes and recommendations have been considered. In my role as a teacher of Stanimir Kabaivanov I would recommend to focus on publishing individually authored papers and focus on solving on significant scientific problems that would allow to apply for DSc degree.

## **CONCLUSION**

Assoc. Prof. Stanimir Kabaivanov, PhD complies with all legal and additional requirements as dictated by ADASRB and internal regulations of Plovdiv University and FESS. Therefore, I hereby state my firm positive opinion on approving Assoc. Prof. Stanimir Kabaivanov for academic position “professor” in 3.8 Economics (Finance).

I recommend that the scientific panel unanimously vote on a proposal to the Faculty Council of the Faculty of Economics and Social Sciences at Plovdiv University "Paisii Hilendarski" to approve Assoc. Prof. Dr. Stanimir Ivanov Kabaivanov for the academic position "professor" in 3.8 Economics (Finance).

18.09.2020 г.

Reviewer: .....

Acad. Prof. DSc Ivan Petkov Popchev