

## OPINION

**Submitted by: Assoc. Prof. Karina Agop Sarkisyan-Dikova, PhD**

Area of Higher Education 3. Social, economic and legal studies, Professional  
Field: 3.8. Economics, Scientific Specialty: World Economy and  
International Economic Relations

Department of International Economic Relations

**Regarding** a dissertation thesis for acquisition of the educational and scientific degree of Doctor of Philosophy submitted by **JINGXIN HU**, PhD Student's No. d010322289, PhD Programme in World Economy and International Economic Relations,

Title of the dissertation thesis: **"Economic and trade cooperation between China and Bulgaria within the framework of "16+1 Cooperation" and "One Belt, One Road"**

**Scientific adviser:** Prof. Galina Zaharieva, PhD

**The opinion is submitted on the grounds of** Order No. 1318 of 3 Dec. 2025 of the Rector of D. A. Tsenov Academy of Economics – Svishtov for appointing a scientific panel.

### **I. General characteristics of the dissertation thesis:**

The presented dissertation on the topic "Economic and Trade Cooperation between China and Bulgaria within the framework of the '16+1 Cooperation' and 'Belt and Road' initiatives" analyses the current state of trade cooperation between Bulgaria and China in the context of the 'Belt and Road' initiative and the "16+1 Cooperation" mechanism established for the countries of Central and Eastern Europe".

Structurally, the dissertation includes an introduction, three chapters, a conclusion, a list of references, and a list of figures, tables, and abbreviations. The total volume of the dissertation thesis is 221 pages, and from this point of view it covers the established standards for a scientific paper.

In order to enhance the comprehension of the text, the dissertation includes 45 figures and 12 tables. The adopted structure is suitable and allows for the logical sequential investigation of the theoretical and practical-applied aspects related to the topic under the mentioned scientific research.

The list of references makes a good impression, totalling 168 titles, mainly foreign bibliographic sources such as books and specialized academic literature, scientific articles and research papers; and internet statistical sources. Undoubtedly, the significant number of literary sources which were presented indicates the high degree of awareness of the doctoral student and his profound knowledge of the specialized literature concerning the research problem. The literary sources are used and cited correctly in the paper.

The main aim of the scientific paper is to build an analysis system for the economic and trade cooperation between China and Bulgaria within the framework of the "Belt and Road" initiative and the "16+1" initiative.

To achieve the defined goal, three more specific objectives have been formulated:

- To build a theoretical framework regarding the integration of small economies into the Global Value Chain (GVC), regional economic integration, and Foreign Direct Investment (FDI).
- To analyse the current situation, structural constraints, and new factors (drivers) of the trade and economic relations and investments between China and Bulgaria;
- To present practical recommendations aimed at strengthening the effectiveness of bilateral trade cooperation, while taking into account factors such as the presence of European regulations, "hard" connectivity, and "soft" connectivity.

The main research problem is well defined and stated as follows:

The decisive drivers of Sino-Bulgarian economic and trade cooperation arise from the joint effects of market demand, institutional facilitation, and infrastructure/compliance optimization, operating in asymmetric ways across exports and imports. On the export side, China's sales to Bulgaria are significantly driven by Bulgaria's population and income per capita; Schengen's border-free regime and unified procedures provide additional incremental gains, while the EU-membership dummy is not significant. Scale economies and hub effects linked to Schengen gateways and sea-rail intermodal corridors help explain the observed positive distance elasticity. On the import side, China's purchases from CEE are more cost-sensitive and display an investment-trade amplification channel, with two period lagged FDI exerting a positive effect. Overall, the IIT base remains low and TCI has substantial room for improvement; advancing hard-soft

connectivity—through port/corridor efficiency, compliance upgrades, and standards alignment—can meaningfully enhance the elasticity and quality of bilateral trade. Findings from Tweedie-GLM and RF/XGBoost are directionally consistent and convergent in relative weights.

The six research objectives are to a large extent related to the contributions of the research and aim to support the research thesis defined by the author.

The author used an adequate methodological toolkit which includes both traditional and relatively new approaches. Within the framework of the dissertation, the theoretical and analytical approach was used to evaluate the development of trade relations between Bulgaria and China from a retrospective point of view; statistical indicators were used to evaluate the development and structure of bilateral trade through the indices of Revealed Comparative Advantage (RCA) and Intra-Industry Trade (IIT) between China and Bulgaria; a gravity model and a machine learning model were constructed to identify the key economic, geographical, and institutional variables that influence bilateral trade and investment flows.

The volume, structure and main concepts of the proposed dissertation thesis are thorough and scientifically sound. The dissertation complies the established standards for a dissertation for acquisition of the educational and scientific degree of Doctor in Professional Field 3.8. Economics at D. A. Tsenov Academy of Economics – Svishtov

## **II. Evaluation of the format and contents of the dissertation thesis**

The introduction is comprehensive and presents the main elements of a scientific research. It presents the importance of the research problem, the achievements in science to date, the theoretical and methodological framework of the conducted research, as well as the tools used to achieve the research goals and objectives. The main goal, thesis and tasks are clearly and unambiguously defined. The methodology and research constraints are defined and the author's intentions for solving the problem are stated.

The first chapter of the dissertation discusses the development of the "Belt and Road" initiative and the "16+1" mechanism, as well as the participation and connection of Bulgaria in these mechanisms. The historical stages of diplomatic and economic relations between Bulgaria and China are traced. In terms of content, the first part of the work also examines the existing theories of regional integration and the theories of Foreign Direct Investment (FDI) from the perspective of the

theories of comparative advantages, endogenous growth, and new institutional economics.

The second chapter focuses on the empirical analysis of trade cooperation between China and Bulgaria. An analysis of the trade structure between the two countries was conducted using statistical indicators such as the Revealed Comparative Advantage (RCA) index and the Intra-Industry Trade (IIT) index. Additionally, in the second part of the presented paper the trade elasticity is estimated through Tweedie GLM (Generalized Linear Model), the marginal impact of the Schengen agreement, green regulations, and logistics costs on two-way trade is examined, and SHAP is used to explain the machine learning model, revealing key driving factors such as population size, FDI (Foreign Direct Investment), infrastructure, and EU regulations.

In the third chapter of the study, structural challenges facing Bulgarian-Chinese cooperation are presented in three main directions: logistics, trade, and compliance (with EU regulations), based on the calculations and analysis performed using econometric models (the constructed gravity model) and the analysis of results obtained through the use of the machine learning model.

Perspectives for the development of bilateral trade relations are presented, taking into account low intra-industry trade, logistical challenges, and the need for compliance with strict European Union environmental regulations.

Recommendations are proposed in the form of a four-dimensional solution. – Black Sea–Danube Port–Rail Corridor, photovoltaic & energy storage low-carbon parks, train–dry port collection–distribution networks and cultural–digital soft connectivity—using hard connectivity to reduce costs and soft connectivity to build trust, and leveraging Eurozone momentum and CBAM to co-create a green, mutually beneficial value chain that reshapes the resilience and depth of China–Bulgaria cooperation.

One of the merits of the thesis are the overviews and summaries at the end of each chapter. They provide additional clarity and information on the investigated issues supplementing the author's findings and conclusions.

The author's summary comprises 46 pages. It is properly structured and contains information that corresponds to the content and reflects the results achieved by the author and the contributions of the dissertation.

The presented list of publications meets the national requirements, with a total score of 40 points (out of the required 30) in area 3. Social, Economic and Legal Sciences, Professional Field: 3.8. Economics, according to the procedure of the Law on the Development of the Academic Staff of the Republic of Bulgaria.

### III. Scientific and applied contributions

The in-depth research work on the doctoral dissertation of Jingxing Hu provides the relevant scientific accumulations for the doctoral student's contribution in the selected scientific field. The indicated five main contributions in the dissertation, listed in the abstract, represent a synthesis of the in-depth research work. consider these contributions to be real, credible, and substantiated by the scientific research.

### IV. Questions regarding the dissertation thesis.

1. The membership of Bulgaria in the Eurozone is a fact since 01 of January 2026. I would like to ask concerning this fact what will be the impact over the further economic relations between Bulgaria and China?

### V. General assessment of the dissertation thesis and conclusion

The dissertation thesis entitles **Economic and trade cooperation between China and Bulgaria within the framework of "16+1 Cooperation" and "One Belt, One Road"** has the characteristics of an independent research with scientific and applied contributions. My opinion is that in terms of structure and content it meets the requirements for a dissertation, as well as the requirements of the Law on the Development of the Academic Staff of the Republic of Bulgaria, the regulations for its implementation and the Regulations for Development of the Academic Staff of D. A. Tsenov Academy of Economics - Svishtov.

The submitted dissertation thesis is comprehensive, logically coherent, with a clearly defined background, in-depth theoretical and empirical research, author's view and proposals for theoretical and practical developments in its topical field.

This gives me the grounds to evaluate positively the dissertation thesis and and to propose to the Scientific Panel to confer to **Jingxin Hu** the educational and scientific degree of "Doctor of Philosophy".

Date: 02 Feb. 2026

Svishtov

Prepared by:

/Assoc. Prof. Karina Sarkisyan-Dikova PhD/

Заличен подпис  
осн. чл. 59  
от ЗЗЛД