To the members of the Scientific Jury

D. A. Tsenov Academy of Economics, Svishtov

Faculty of Management and Marketing

Department of International Economic Relations

Svishtov

OPINION

of a member of the scientific jury,

determined by Order No. 1318/ 03 December 2025

of the Rector of D. A. Tsenov Academy of Economics, Svishtov

regarding a dissertation for acquiring the educational and scientific degree "PhD"

The opinion is prepared by: Assoc. Prof. Iliyan Genov Mateev, PhD, Department of "Economic Theory and International Economic Relations", Faculty of Economics, "St. Cyril and St. Methodius" University of Veliko Tarnovo.

Author of the dissertation: doctoral student Jingxin Hu, doctoral program "World Economy and International Economic Relations", d010322289

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

I. General presentation of the dissertation:

1. Subject

The subject of research in the dissertation work are the conditions for economic and trade cooperation between China and Bulgaria within the framework of "16+1 Cooperation" and "One Belt, One Road" initiatives, its development and the results achieved.

2. Aim and objectives of the study

The aim of the dissertation is to build a comprehensive analytical framework for the economic and trade cooperation between China and Bulgaria within framework of the "16+1 Cooperation" and "One Belt, One Road" initiatives.

The dissertation focuses on solving the following main tasks:

- To arrange the theoretical basis and academic progress of economic cooperation between China and Bulgaria within the framework of "One Belt, One Road" and "16+1 Cooperation", clarifying the application of basic paradigms such as regional economic integration, global value chain and new institutional economy;

- To systematically quantify the evolution of bilateral trade structure, comparative advantages and intra-industry trade between China and Bulgaria during the period from 2015 to 2023, as well as taking into account the dynamic characteristics of industrial complementarity and mirror division of labor;

- To construct and evaluate structured gravity models and machine learning models, such as random forest/eXtreme Gradient Boosting (XGBoost), and use explanatory tools such as SHapley Additive exPlanations (SHAP), to identify key economic, geographical and institutional variables that influence bilateral trade and investment flows;

- Explore the potential for further cooperation, using the empirical results to derive the possibility of deeper embedding of China-Bulgaria trade in regional and global value chains;

- Identify promising sectors with higher added value and critical nodes (ports, distribution centers and warehouses) for connection along relevant transport corridors;

- Assess the main constraints and risks by analyzing how logistical obstacles, recent EU regulatory initiatives (such as the Foreign Subsidies Regulation (FSR) and the Carbon Border Adjustment Mechanism (CBAM) and broader geopolitical instabilities may affect the costs of cooperation, the resilience of supply chains and the long-term sustainability of China-Bulgaria economic ties;

- Propose policy recommendations and develop an operational implementation path and a system of evaluation indicators aimed at improving the efficiency of infrastructure connectivity, improving financial and institutional linkages and building an environmentally and sustainably friendly cooperation mechanism.

3. Volume

The dissertation has a total volume of 221 standard pages, with the following structure: introduction, main text of three chapters, conclusion and list of sources of information - a total of 168 sources. The main text includes 12 tables (in Chapter Two) and 45 figures (2 in Chapter One, 28 in Chapter Two and 15 in Chapter Three).

4. Structure

The structure of the dissertation is balanced and follows in a logical sequence the realization of the set goals and objectives of the study. The research thesis and the relevance of the study are precisely formulated, and some restrictive conditions for its implementation are also indicated.

The introduction explains the framework of the study and its academic significance, clarifies the main tasks and the methodological framework, as well as determines the data source and the technical path.

Chapter One "THEORETICAL AND HISTORICAL FOUNDATIONS OF CHINA-BULGARIA ECONOMIC COOPERATION" focuses on the mechanisms "One Belt, One Road" and "16+1 Cooperation", examines the historical stages of diplomatic and economic relations between the two countries, systematically examines theoretical schools such as regional economic integration, global value chains and new institutional economics, and compares the correspondence between China's foreign economic strategy and the "National Development Program "Bulgaria 2030", laying the theoretical foundation for empirical analysis in the following text;

Chapter Two, "EMPIRICAL ANALYSIS OF CHINA-BULGARIA ECONOMIC COOPERATION", uses data from the United Nations Commodity Trade Statistics Database (UN Comtrade), EU Eurostat and China Customs for the period from 2015 to 2023 to build a system of indicators including Standard International Trade Classification (SITC), Revealed Comparative Advantage (RCA), Trade Complementarity Index (TCI), Trade Integration Index (TII) and Intra-Industry Trade (IIT), quantifying the evolution of trade structure and comparative advantage between China and Bulgaria. It then estimates trade elasticity using the Tweedie Generalized Linear Model (GLM), examines the marginal impact of Schengen virtual goods (digital IDs, visas, etc.), green regulations and logistics costs on two-way trade, and uses SHapley Additive exPlanations (SHAP) to explain the machine learning model, revealing key driving factors. such as population size, foreign direct investment, infrastructure and EU regulations.

Chapter Three "CHALLENGES, PROSPECTS, AND POLICY RECOMMENDATIONS" is based on the use of econometric models, machine learning analysis and cross-validation evidence from typical cases:

- First, it examines the structural challenges facing trade and economic cooperation between China and Bulgaria in three main areas: trade, logistics and compliance (the process of complying with laws and regulations governing international trade);

- Second, it sets realistic expectations and development prospects in light of long-term low industrial income, logistical difficulties and stricter compliance with EU environmental requirements, while considering the benefits of increasing domestic demand in China, the spread of high-end capabilities (products with premium quality, high capacity or premium functionality), the multiplier of foreign direct investment in trade and land-sea digital corridors (integrated transport networks that use digital technologies to ensure the seamless flow of information and goods between land and sea transport);
- Third, it offers practical policy recommendations in the form of a four-dimensional solution – a Black Sea-Danube port-rail corridor, photovoltaic and low-carbon energy storage parks, train collection and distribution networks and dry ports, and cultural-digital soft connectivity – using hard connectivity to reduce costs and soft connectivity to build trust, and using the momentum of the euro area and the Carbon Border Adjustment Mechanism (CBAM) to jointly create a green, mutually beneficial value chain that changes the sustainability and depth of cooperation between China and Bulgaria.

5. Literature

The 168 sources of information related to the topic of the dissertation are listed from pages 212 to 221, inclusive. They are used correctly and precisely.

II. Assessment of the form and content of the dissertation.

1. Assessment of the relevance and elaboration of research in the dissertation scientific problem

The content of the dissertation is particularly relevant, while meeting the requirements for scientific research work and containing the necessary requisites. It covers both theoretical and practical-applied aspects, characterized by competent summaries and analyses by the doctoral student.

2. Opinion on the language, volume and tools of the dissertation

The language and style used in the dissertation show that the doctoral student possesses excellent research skills. The dissertation is characterized by a precise, consistent and understandable scientific style, and the volume of scientific research is well balanced.

The study combines historical-logical analysis, comparative statistics and hybrid econometric-monitoring tools to understand the evolution of economic cooperation between China and Bulgaria.

3. Opinion on the extent to which the abstract accurately and completely reflects the work

The abstract has been prepared in good faith, in a sufficient volume of 38 pages, and faithfully presents the structure and content of the dissertation work.

III. Scientific and scientific-applied contributions of the dissertation.

- The dissertation develops a multi-level analytical framework that combines macro-series analysis, structured econometric modelling, and machine learning techniques;
- A combination of macro trade data and micro case studies is used, the latest global input-output tables and bilateral trade and investment data are applied, and a system of indicators is built reflecting the value chain linkages and trade complementarity between China and Bulgaria;
- Advanced econometric models (including the Tweedie GLM gravity model) and network/machine learning methods (such as random forest and XGBoost interpreted by SHAP) are used to quantify the impact of infrastructure projects and policy measures related to the Belt and Road Initiative on bilateral trade expenditures and investment flows.

IV. Questions and recommendations on the dissertation.

The dissertation meets my expectations and I have no critical remarks. However, I have one question:

1. Is there a danger that Bulgaria will remain on the periphery or outside the main routes of the two initiatives if it does not show a more active diplomatic and economic initiative?

V. Summarized evaluation of the dissertation and conclusion.

The presented dissertation work on the topic: **"Economic and trade cooperation between China and Bulgaria within the framework of "16+1 Cooperation" and "One Belt, One Road""** is an in-depth study of a current problem, contains original author's theses, analyses and summaries. It fully meets the requirements of the Act on Development of the Academic Staff in the Republic of Bulgaria, the Regulations for the Implementation of the

Act, as well as the Regulations for the Implementation of the Act at the D. A. Tsenov Academy of Economics, Svishtov".

The dissertation is evidence of the high theoretical preparation and the ability of the doctoral student to independently conduct scientific research.

ON THIS BASIS, I GIVE A CATEGORIC POSITIVE EVALUATION AND PROPOSE TO THE MEMBERS OF THE SCIENTIFIC JURY TO AWARD THE EDUCATIONAL AND SCIENTIFIC DEGREE OF "DOCTOR OF PHILOSOPHY" TO JINGXIN HU IN THE FIELD OF HIGHER EDUCATION 3. SOCIAL, ECONOMIC AND LEGAL SCIENCES; PROFESSIONAL FIELD 3.8. ECONOMICS; DOCTORAL PROGRAMME "WORLD ECONOMY AND INTERNATIONAL ECONOMIC RELATIONS".

30 January 2026   Prepared the opinion:

Veliko Tarnovo

заличен подпис
осн. чл. 59
от ЗЗЛД

(Assoc. Prof. Iliyan Mateev, PhD)