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## **REVIEW OF THE DOCTORAL THESIS (DISSERTATION)**

*Problems of Aquatic Products Export from Shandong Province to Belt and Road  
Initiative Countries*

Author: Jiayu Ru, MA

Promoter: prof. zw. dr hab. Ewa Oziewicz

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Scientific discipline of the dissertation: Economics and Finance.

### **1. GENERAL OPINION**

The dissertation authored by Ms Jiayu Ru, MA, submitted for review, has 176 pages, its conceptualization and content fulfils the requirements of a doctoral dissertation. It deserves a positive assessment due to its methodological, cognitive and formal values.

The undertaken research problem is an important contribution to the scientific and expert debate on new phenomena in the PRC's foreign trade, including on its decentralization, which is reflected in the development of trade at the provincial level.

The author demonstrates a satisfactory level of general theoretical knowledge in the discipline of economics and finance. She competently selects the literature on the subject, using world literature that is important for her

research, and makes extensive use of English-language Chinese. This work is mainly based on it and own research.

The PhD candidate is the author of one publication related to the subject of the dissertation.

## **2. SUBSTANTIVE ASSESSMENT**

### **2.1. Selection of the research problem**

The subject of the dissertation is the issue of the development of exports of the Chinese fishing industry to the countries belonging to the Belt and Road Initiative (BRI), presented on the example of the Shandong province in the light of trends in the Chinese foreign trade and transformation of the PRC economy.

The research problem of the dissertation is therefore important both from the cognitive and applicative point of view. The export experience of the Shandong province, presented comprehensively in the dissertation, is of great importance for the Polish enterprises interested in trade with China at the provincial level. The importance of the research problem is also related to the fact that in the Polish economic literature there is no comprehensive study in terms of application on the problems of trade between Chinese provinces and BRI countries. The PhD candidate undertook this task. Her work comprehensively presents this problem in the light of changes in the Chinese foreign trade and the markets of the BRI countries. It is interesting and contributes to reducing the existing gap in the Polish literature on the subject.

### **2.2. Conceptualization of the dissertation (assumptions, goals, hypotheses, method)**

The main objective of the dissertation is *to describe the trade of aquatic products between Shandong Province and countries belonging to the Belt and Road route* (p. 3). This generally formulated objective of the dissertation is

developed in the form of task partial goals, formulated in individual chapters of the work, and in a synthetic introduction.

Starting from the thus formulated purpose of the dissertation, the PhD candidate formulates the following 10 research hypotheses that are helpful in determining the partial objectives of the dissertation: H 1. The per capita GDP of importing countries is positively correlated with aquatic products export of Shandong province; H 2. The per capita GDP of exporting countries is positively correlated with aquatic products export of Shandong province; H 3. The total population of importing countries is positively correlated with aquatic products export of Shandong province; H 4. The total population of exporting countries is positively correlated with aquatic products export of Shandong province; H 5. Distance is negatively correlated with aquatic products export of Shandong province; H 6. Tariff's share of national tax is positively correlated with trade inefficiency; H 7. Country's membership in the WTO is negatively correlated with trade inefficiency; H 8. Degree of currency freedom is positively correlated with trade inefficiency; H 9. Liner Shipping Connectivity Index is negatively correlated with trade inefficiency; H 10. The degree of financial freedom is negatively correlated with trade inefficiency.

The research hypotheses formulated by the PhD candidate should be supplemented with the eleventh one i.e. *"export of aquatic industry products from Shandong Province depends on the commercial and technical performance of the countries of the Belt and Road Initiative"* (p. 2).

The methodological approach to the work, consisting in formulating the main goal and partial goals in connection with the research hypotheses, is methodologically correct. Their verification contained in individual chapters of the work, extended with general theoretical considerations and additional research questions, proves the high research competence of the PhD candidate, as well as her comprehensive knowledge in the field of economics and finance.

The author mainly uses the analytical and descriptive methods, skilfully combines quantitative and qualitative tools, extensively uses the comparative and normative method (when she formulates her own conclusions and opinions). She widely uses econometric research and builds his own electrometric model, which is the basic tool for verifying research hypotheses. For researchers specializing in econometric studies of trends in foreign trade, it can be an innovative inspiration.

The PhD candidate focuses on economic issues and subordinates the methodological side of the work to them. However, if necessary, she also uses the tools of political science, especially when she characterizes the internal conditions determining the directions of development of the Chinese economy and analyzes the development of the aquatic industry in China in the light of the economic policy of the PRC. This makes the work unique when it comes to studying the problems of China's trade development with BRI countries at the provincial level. It is also of great importance for the Polish enterprises, especially those starting trade cooperation with the Chinese enterprises.

### **2.3. The structure and content of the dissertation**

Ms Jiayu Ru's doctoral dissertation consists of six chapters, an introduction, a bibliography, a list of charts, figures and tables, as well as a summary in Polish and English languages (Chapter 6 contains a summary and conclusions as well as practical recommendations for the development of trade with China and suggestions for further research). The layout of the work is logical, the proportions between its individual parts are maintained.

In the introduction (pp. 1-9), the PhD candidate discussed the conceptualization of the dissertation and justified the importance of the research problem undertaken. She indicated the content of individual chapters and presented the research methods. She synthetically characterized the assumptions

of the Belt and Road Initiative and presented the political context of this undertaking.

The chapters are complementary to each other and maintain volumetric proportions, their titles reflect the essence of the research problem undertaken. At the beginning of each chapter, the author formulates the goal and defines the research task, in the summary she formulates conclusions, including those regarding further research.

The first chapter, *Theoretical Framework of the Belt and Road Initiative* (pp. 16-49), presents the theoretical assumptions of the Belt and Road Initiative and its political context, which is the initial basis of this project.

Then, she conducts an economic analysis of the directions of development of Shandong Province and justifies in this context the importance of the *Belt and Road Initiative* for accelerating the development of this province thanks to the development of exports, including the fishing industry.

The second chapter, *Development and Trade of Aquatic Products in Shandong Province* (pp. 50-74), presents the volume and geographical structure of Chinese exports of fishing industry products in the context of the development of this industry. Against this background, the PhD candidate characterized the production and export of this industry in Shandong province. The strength of this chapter is the analysis of barriers related to these exports. The author proposes, among others, the decentralization of this export and its further market diversification. She also critically assesses the quality of Shandong aquatic industry products as a barrier limiting the growth of the export in question and proposes certain changes in this regard.

The third chapter, *Study of Shandong Province's Export Potential of Aquatic Products to Belt and Road Countries* (pp. 75-93), analyzes the export potential of Shandong Province to BRI countries in the field of aquatic industry products. The author, analyzing the Chinese trade policy in this area, presents its goals, means and tools, as well as its internal and external conditions. In this

context, she analyzes the problem of competitiveness and the relative advantages of Shandong province in the field of aquatic industry. The purpose of this analysis is to identify opportunities to increase exports to the BRI countries, which is served by quantitative econometric studies and empirical qualitative studies conducted respectively in the next two chapters.

The fourth chapter, *Trade Potential Measurement and Stochastic Frontier Gravitation Model (SFGM)* (pp. 94-117), presents an analysis of the export efficiency of Shandong aquatic industry products. For this purpose, the PhD candidate uses her own Stochastic model (SFGH), as she states "to overcome the disadvantages" of the traditional gravity model. On its basis, she determines the optimal values of the export in question and justifies the possibility of increasing it in the light of the development directions of the Shandong province and market conditions in the BRI countries.

The fifth chapter, *Data Envelopment Analysis Model and Variable Selection* (pp. 118-154) presents the results of empirical qualitative research confirming the possibility of increasing exports to BRI countries. The non-parametric method used by the PhD candidate in this chapter was supplemented with quantitative analysis. By doing so, she also confirms the possibility of increasing the exports in question from Shandong Province to the BRI countries in the light of changes in China's foreign trade.

The sixth chapter, *Conclusions Recommendations and Further Research* (pp. 155-161), presents the most important findings and conclusions from the conducted research from the perspective of the adopted assumptions and research hypotheses. The results of the conducted analysis show that there is a significant untapped potential for the export of aquatic industry products from Shandong province to the BRI countries. The PhD candidate formulates recommendations regarding the use of this potential.

#### **2.4. Literature used. Bibliography**

The PhD candidate competently selects the literature on the subject. This applies to both the theoretical layer of work as well as the empirical one. The selection of the research material also indicates the author's deep knowledge of the subject of the dissertation.

The bibliography is a specific value of the work, it is useful for researchers of the problems of the Chinese economy, especially the changes taking place in the Chinese foreign trade and the conditions of cooperation between Polish and the Chinese enterprises at the provincial level.

### **3. ASSESSMENT OF THE LANGUAGE AND FORMALITY OF THE TRIAL**

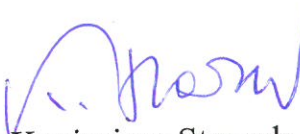
In general, the formal side of dissertation deserves a high rating. It also consists of carefully made tables and drawings as well as high aesthetics of the presented text. The author skilfully uses tabular techniques and performs graphical presentations, mostly her own studies.

### **4. CONCLUSIONS AND RECOMMENDATION**

The reviewed dissertation of Ms Jiayu Ru MA entitled *Problems of Aquatic Products Export from Shandong Province to Belt and Road Initiative Countries*, is a competent economic analysis, covering both the theoretical and empirical layer of an important research problem.

The PhD candidate has demonstrated appropriate analytical skills in economic problems, which indicate the ability to independently conduct scientific research. The identification of the research problem, its interpretation and independent solution made by her allows us to conclude that the reviewed dissertation is an original and methodologically correct study of an important research problem. The work is also a source of important information about the Chinese foreign trade and economy and undoubtedly enriches practical knowledge about trade at the level of the Chinese provinces.

**Recommendation:** Doctoral dissertation of Jiayu Ru, M.Sc. *Problems of Aquatic Products Export from Shandong Province to Belt and Road Initiative Countries*, fulfils statutory methodological and formal requirements for doctoral dissertations. In view of the above, I am applying for its admission to the public defence.

  
prof. Kazimierz Starzyk

Warsaw, June 21, 2023