

dr hab. Jacek Batóg prof. US  
Katedra Ekonometrii i Statystyki  
Instytut Ekonomii i Finansów, Uniwersytet Szczeciński,  
ul. Mickiewicza 64, 71-101 Szczecin

Szczecin, 20.05.2024

## REVIEW

**of the doctoral thesis of Raphael Erineus Haule, M.Sc.  
entitled *The Role of Foreign Investors in Economic Growth of Tanzania: Determinants and Impact of Foreign Direct Investment (FDI)* written under the scientific supervision  
of dr hab. Marcin Salamaga prof. UEK with the participation of assistant supervisor  
dr Roman Huptas at the Cracow University of Economics**

### **Introduction – formal background, purpose and scope of the review**

The basis for the preparation of this review is the decision of the Council of the Discipline of Economics and Finance of the Cracow University of Economics dated 18.03.2024 to entrust me with the task of evaluating the doctoral thesis of Raphael Erineus Haule, M.Sc., entitled „*The Role of Foreign Investors in Economic Growth of Tanzania: Determinants and Impact of Foreign Direct Investment (FDI)*”.

The aim of the examination is to assess whether the submitted dissertation meets the requirements of the Act of 14 March 2003 on Scientific Degrees and Academic Titles and on Degrees and Titles in the Field of Art of 14 March 2003 (Dz. U. 2017, item 1789, as amended, in conjunction with the Act of 3 July 2018, item 1669, as amended, constituting an original solution to a scientific problem, and whose Author demonstrates general theoretical knowledge in the field of *economics* and the ability to carry out scientific work independently and can be admitted to the public defence.

The review considered the following areas of compliance with the statutory requirements for doctoral theses:

1. The relevance of the choice of topic and originality of the research problem.
2. Correctness and completeness of the research hypotheses and their consistency with the purpose of the study.
3. Formal aspect of the thesis. Editorial and linguistic style of the thesis.
4. Knowledge of research methodology and applied research methods.
5. Structure and substantive value of the dissertation.
6. Selection and use of literature sources.

The review concludes with a conclusion presenting a final assessment of the dissertation.



## **1. Relevance of the choice of the topic and the timeliness and originality of the research issue**

The assessed thesis by Raphael Erineus Haule, M.Sc. presents the theoretical background and empirical analysis of the impact of Foreign Direct Investment (FDI) on economic growth on the example of the Tanzanian economy. It also characterises of the relationship between FDI and the level and dynamics of external trade, taking into account the comparative advantage and investment attractiveness of selected sectors of the economy.

This is undoubtedly a topical issue, especially for developing countries, as FDI makes it possible to overcome one of the main obstacles to economic growth, namely the low level of capital. The inflow of foreign investment allows the transfer of modern technology, which increases labour productivity and modernises the economy, often significantly changing its sectoral structure. Foreign investors show a demand for workers with specific and advanced skills, which leads not only to changes in the education system, but also to the transformation of the labour market. The subject under study is therefore important, as it can provide a source of rationale to support the construction of pro-development economic policies.

## **2. The correctness and completeness of the research hypotheses and the aim of the work**

The research hypothesis should be original in nature and its verification must have a substantive justification that is reflected in the research questions. This means, among other things, to assessing whether the methodology proposed by the Author of the thesis produces interpretatively unambiguous results obtained on the basis of existing or proposed formal tools, which allow the formulated research hypotheses to be verified. The doctoral candidate did not formulate a main research hypothesis, but presented three sub-hypotheses:

Hypothesis 1: *The positive impact of FDI inflows on the Tanzanian economy varies according to the type of sector,*

Hypothesis 2: *Tanzania's economic growth stimulates FDI inflows regardless of the type of economic sector,*

Hypothesis 3: *The impact of FDI on foreign trade can vary across economic sectors.*

All the above hypotheses and their verification are directly related to the main objective of the dissertation, which is to examine the multifaceted impact of FDI on Tanzania's GDP and external trade. They reflect the research intentions of the PhD student, and allow for inde-

pendent research and the formulation of the author's conclusions. However, there seems to be a slight inconsistency in the second research hypothesis, according to which economic growth is the cause of FDI inflows, while the main objective of the dissertation indicates an inverse relationship.

### **3. The formal side of the dissertation. Editorial and linguistic style of the dissertation**

The length of the reviewed thesis is 247 pages, including the main text of 191 pages and the bibliography of 50 pages. The dissertation consists of an introduction, 7 chapters, a conclusion and a list of literature, tables and figures. I conclude that the structure of the work, from a formal and substantive point of view, allows the analysis of the research problems posed to be carried out in a logical manner to a relatively satisfactory degree. However, from an editorial point of view, the work does not fully comply with the standards in force. This applies in particular to the figures presented, whose titles are imprecise and incomplete, and whose perception is hampered by the lack of description of the ordinate axes, especially in relation to the lack of units of measurement used.

The content of some figures, including their description, is also questionable. Examples are Figures 2.13(a) and 2.13(b), and Figure 2.14, where agriculture is not shown in the structure of GDP in 2000. The description of Figure 2.15 as "From 1980 the trade balance moves below zero while imports and exports move above zero" (p. 59) is also factually questionable. Some figures show line colours that do not appear in the legend – for example in Figures 3.1 (p. 95) and 3.2 (p. 96).

Although the terminology used is mostly appropriate to the subject matter, there are some phrases that need clarification, such as "The parameters estimated using OLS are both unbiased and valid" (p. 130), as well as different definitions of identical variables ( $Y_i$  and  $E_j$  in equation 6.2 on p. 145) or imprecise test names (the name "Dickey-Fuller test" refers to the standard form of this test, and not to its extended version referred to in the text as "ADF" (e.g. p. 164)), the linguistic side of the dissertation, unfortunately, requires a thorough revision. This mainly concerns the linguistic style and grammar.

Problems in this regard can be found on almost every page of the paper. An example is the sentence "Tanzania spends less than 1 per cent of the agricultural GDP on agriculture..." (s. 11). In this form, the text of the thesis is very difficult to read with understanding.

The assessment of the formal aspects of the thesis is further hampered by the presence of the deficiencies listed below:

- including extracts from the text that are semantically separate from the content presented in a particular chapter/subchapter. Examples include the section on the fiscal deficit and debt and the section on poverty in subsection 1.4.2.2 on health sector reforms,
- the use of different font sizes (e.g. p. iii of the table of contents),
- the frequent use of the same variable names beginning with lower and upper case letters interchangeably,
- occurring editorial and spelling errors (e.g. the absence of the character “ln” next to the variable GDP in equations 6.5 and 6.7 on p. 148),
- pointing to non-existent tables – as in the case of Table 6.6 (p. 156) or referring to inappropriate tables (e.g. Table 6.3 instead of Table 6.4 on p. 157),
- in the tables showing the estimation results, there should be an explanation that their mean estimation errors have been included in brackets below the parameter estimates,
- incomplete preservation of the alphabetical order of the references in the bibliography.

#### **4. Knowledge of research methodology. Research methods used**

As part of the quantitative analysis, the PhD student used two main research tools: the gravity model and the VECM model. The methods used are complementary and allow for a comprehensive analysis of the impact of selected macroeconomic factors on FDI, as well as the impact of FDI on economic growth. The research methodology chosen by the doctoral candidate is appropriate to the objective of the thesis. The choice of research methods allows for the verification of the formulated research hypotheses based on the quantitative analysis of the research problem undertaken and the formulation of general conclusions.

#### **5. Structure and content of the dissertation**

The structure of the thesis, in the context of the generally accepted nature of doctoral theses, is satisfactory. However, it would be clearer if the first two chapters were considerably shortened. The reflections on the reforms of the different parts of the Tanzanian economy, as well as the detailed characterisation of these parts, are too extensive.

The inclusion of subsection 2.5 in Chapter 2 is also questionable, as is the creation of subsections consisting of a single page, the contents of which additionally sometimes do not correspond very well to the titles of these subsections (e.g. subsection 6.2). In subsection 3.8, entitled “Types of Foreign Direct Investment in Tanzania” which is 6 pages long, only one

page refers to FDI in Tanzania. Valuable elements of the theoretical nature of the thesis are the sections devoted to discussing the various definitions of FDI, types of FDI and theories on the channels of FDI inflows.

Specific comments on the merits of the thesis, which are somewhat controversial, are presented below:

1. The PhD student states in the introduction (p. viii) that the analyses were carried out between 1999 and 2023, while the last year included in the empirical section is 2022.
2. The question arises as to why the PhD student was unable to provide more recent data than 2015 on the number of commercial banks and financial institutions operating in Tanzania? The same comment can be made about the number of domestic and foreign companies, for which the last year presented was 2018 (Table 4.1, p. 116).
3. Very often, the doctoral candidate's comments in chapters 1 and 2 refer at most to the years 2010-2015, while the basic analyses were carried out for more recent data.
4. On p. 149, the last TIC report is given as 2021, whereas earlier in the thesis (in subsection 4.3) it appears to be 2018.
5. When describing the unusual changes in the variables presented, the PhD student relatively rarely discusses their causes.
6. It would be interesting to have an explanation of the choice of the exponential function as the analytical form of the model (5.1) (p. 128) and a more detailed explanation of the basis for the statement "The initial selection of explanatory variables for the model was based on the backward stepwise regression method" (p. 129), as well as the rationale for using the number of mobile phones per 100 inhabitants as a variable to characterise the level of infrastructure development, instead of, for example, the density of roads and the number of means of transport (p. 129).
7. The proposed variable in the form of "remittances" to explain aggregate changes in FDI tends to refer only to investments determined by the size and shape of the market (market-oriented FDI). The adoption of a variable characterising the skills of the labour force in the form of primary school graduates as an explanatory variable for FDI inflows also needs to be justified (p. 130). Are there no data on "secondary education" and university graduates?
8. Statements that Figures 5.3 (p. 134) and 5.4 (p. 135) show negative or positive relationships are somewhat misleading if they are not accompanied by values for the correlation coefficients and verification of their significance. In fact, at first glance, there is a very low correlation between the observed variables is apparent.

9. The description below Figure 5.5 makes virtually no reference to the data presented in it (p. 136).
10. Statements that the model is statistically significant based on the values of the F statistic are not correct. The value of this statistic only indicates that there is at least one statistically significant parameter in the model, and therefore such a model dominates over a model with only an intercept (e.g. p. 137).
11. Claims that a variable has a stronger effect on the dependent variable based on the value of the parameter estimates are not justified. This would be the case if model parameters were estimated for standardised variables (e.g. p. 137).
12. The description below Figure 5.5 makes virtually no reference to the data presented there (p. 136).
13. The main substantive comment on the quality of the gravity and dynamic models presented concerns the degree of their fit to the empirical data. It is a major oversimplification to assume that a coefficient of determination sometimes well below 50% allows legitimate interpretations and conclusions to be drawn.
14. Although the results of modelling based on the VECM model appear to be valuable, the PhD student could make a broader attempt to explain the results that appear to be inconsistent with expectations/theory (subsection 7.2).

## **6. Selection and use of literature sources**

The study is well based on Polish and foreign literature on the subject. The author of the study used a large literature of more than 500 publications, taking care to present the various views contained in previous studies by other authors dealing with the study of the importance and determinants of FDI. However, the assessment of the selection of literature is lowered by the lack of recent articles – the latest publications cited are from 2016.

### **Final conclusion**

Evaluation of the concept, content, methods and research results as well as the theoretical, cognitive and practical significance of the doctoral thesis entitled *The Role of Foreign Investors in Economic Growth of Tanzania: Determinants and Impact of Foreign Direct Investment (FDI)*, written by Raphael Erineus Haule, M.Sc., under the scientific supervision of dr hab. Marcin Salamaga, prof. UEK, with the assistance of assistant supervisor dr Roman Hup-tas, at the Cracow University of Economics, has shown that it is a study of a current research problem.

The doctoral candidate demonstrated a good knowledge of the subject matter and general economic knowledge, the ability to formulate the research problem, to select and use source material and to apply research methods. The scientifically significant achievements of the doctoral student include, in particular, the exhaustive characterisation of the definitions and types of FDI and the theory of its impact on the economy, as well as the use of advanced econometric models to verify the formulated research hypotheses. It is unfortunate that the generally positive assessment of the dissertation is marred by the very poor quality of the English translation.

The presented considerations, results and conclusions presented constitute a creative and original contribution to the development of the discipline of *economics* in its theoretical and, to a certain extent, practical aspects; they represent an independent solution to a scientific problem and testify to the satisfactory maturity and research independence of the doctoral candidate. The comments of a controversial nature presented in the review do not significantly lower the substantive value of the dissertation and do not undermine the final positive assessment of the dissertation, which fully meets the requirements of the Act of 14 March 2003 on Scientific Degrees and Academic Titles and Degrees and Titles in Art (Dz. U. 2017, item 1789, as amended, in conjunction with the Act of 3 July 2018, item 1669, as amended).

**On this basis, I request that the Doctoral Thesis of Raphael Erineus Haule, M.Sc. be accepted by the Council of the Discipline of Economics and Finance of the Cracow University of Economics and admitted to public defence.**

A handwritten signature in black ink, appearing to read 'Babiarz', with a long, sweeping underline stroke extending to the right.