

To "D. A. Tsenov" Academy of Economics
Department of "Finance and Credit"

REVIEW

By Prof. Dr. Andrey Boyanov Zahariev under the procedure for the Educational and Scientific Degree "Doctor" under the Regulations for the Development of the Academic Staff at the "D. A. Tsenov" Academy of Economics on a dissertation on the topic: "Financial management of investments in the national and cross-border transport network", with the author doctoral student Borislav Petrov Lazarov d020220208 part-time doctoral studies, education financed by the state, by field of higher education: 3. Social, economic and legal sciences, professional direction: 3.8. Economics, doctoral program: "Finance, money circulation, credit and insurance" (Finance) with scientific supervisor Prof. Dr. Stoyan Prodanov.

1. General presentation

The dissertation submitted for review is authored by part-time doctoral student Borislav Lazarov, who was enrolled with Order No. 571/20.07.2020 and was dismissed at the end of the fourth year according to the plan of his doctoral studies. All requirements of the doctoral plan are assessed as fulfilled. The presented dissertation has a volume of 193 standard pages. Contains three chapters, 30 tables, 54 figures. Specialized IBM SPSS Statistics software was used for research purposes. The bibliography confirms research and use in support of 90 literary sources, incl. 60 sources in a foreign language and 30 in Bulgarian.

2. Scientific framework of the dissertation work

Based on the topicality of the issue, the object of research is the republican and cross-border transport network. The subject of the scientific work of the scientific work is the financial management of investments in the transport network - republican and transnational - to ensure an increasing in intensity traffic of motor vehicles, passengers and cargo.

The thesis in the dissertation is related to the statement that investments in the republican and cross-border transport network create sustainability of the economy as a whole and of transport as a sector, in the interest of economic operators and consumers, by ensuring economic growth and providing logistical needs with relevant transport costs. As an industry, transport reflects the level of economic standard and

reflects on the efficiency of other social and economic spheres. The republican and cross-border transport network is a commodity of a mixed public-private type. This puts the public benefits and costs, as well as the relationship between the density of the road network of the respective class and GDP per capita by region and for the country as a whole, into the basis of the evaluation of investments in such objects. Ensuring a positive benefit/cost ratio and maximizing net public benefits is a function of developing and following a long-term strategy for the renewal and maintenance of the national and cross-border transport network.

The aim of the dissertation is to identify the problems and propose solutions for the development of a sustainable road infrastructure, successfully integrating the republican one into the Trans-European Transport Network (TEN-T), through the analysis and assessment of investment needs, projects and programs in Bulgaria and Europe.

The specific tasks that are set in the development are:

First. To analyze the state of the republican and cross-border transport network and identify problem areas for the sustainable development and investment planning of the road network of the Republic of Bulgaria.

Second. To derive models, through statistical processing of monthly traffic data, for the load on the main routes for international traffic within the integrated national road network of the Republic of Bulgaria in the Trans-European Transport Network (TEN-T) with a view to a new concept of a transport network ensuring safe road infrastructure for the movement of goods and people between countries in and outside the EU.

Third. To justify and approve a benchmark approach for effective and prospective financial management of investments in the road sector while satisfying the set of technological and organizational constraints and according to public conditions and needs with a focus on facilities and routes with a direct positive effect on GDP and the expansion of capacity for transit traffic upon payment of relevant toll fees and vignettes.

The above-defined object and subject, leading thesis, research objective and scientific tasks allow the dissertation work to be linked at an analytical level to the testing of three working hypotheses:

Hypothesis one. The sustainable development of the road network of the Republic of Bulgaria and the EU requires a permanent analysis of the state of the republican and cross-border transport network and identification of problematic areas requiring investment in maintenance and development.

Hypothesis two. The construction of a new concept for a national transport network providing a safe road infrastructure for the movement of goods and people between EU and non-EU countries should be based on statistical models with studied monthly traffic data on the load on the main routes for transit traffic within the integrated national road network of the Republic of Bulgaria in the Trans-European Transport Network (TEN-T).

Hypothesis three. In order to achieve a direct positive effect on GDP and expand the capacity for transit traffic against the payment of relevant toll fees and vignettes, a benchmark approach for effective and prospective financial management of investments in existing and new transport facilities and routes should be substantiated and approved, taking into account technological and organizational constraints, as well as societal conditions and needs.

3. Content of the dissertation research

The content of the dissertation includes an exposition by chapters as follows:

In the first chapter, the relationship between the national and trans-European transport networks from ch. of the problems facing investment planning for the purposes of their accelerated development. Focus is placed on the problem of the accelerating intensity of traffic by motor vehicles in Bulgaria, which is due to the corridors of the European transport network (TEN-T) for international transport and the national road network passing through the country. This lag is most noticeable on the roads of Northern Bulgaria, where the belated public investments in expressways and highways, together with the growing transit traffic through the northern checkpoints along the Danube River. In parallel, the development of the trans-European transport network is characterized by an accelerated pace and a variety of intermodal alternatives for the transport of people and goods. The problematic nature of the research in this chapter is also supported by the relationship of damage to the car fleet in road traffic accidents (TTP), incl. and the loss of human life where the road network does not meet the standards of modern development, for which there is empirical evidence and scientific research in the field of motor insurance. Based on a database from the State Automobile Administration and the TOL system, current trends are established for the intensity of automobile traffic in northern Bulgaria from and to the border crossing, connected to the two bridges at Ruse and Vidin and the functioning ferries at Oryahovo and Nikopol. As a result of the analysis, a conclusion was drawn in support of the financial and economic justification and the need for new investments in the TEN-T network in northern Bulgaria. It should secure the three

leading investment routes: AM "Hemus", AM "Botevgrad - Vidin" and AM "V. Tarnovo - Ruse".

The second chapter debates the methodological foundations and issues of the need to develop the national transport network to ensure the increasing intensity and tonnage of transit traffic, measured by data at all checkpoints. A complex model has been developed to test the connection for ten categories of vehicles as the quantitative data correlating the reported vehicles passing through the main and secondary entry points for transit traffic through Bulgaria. Correlation and regression modeling, descriptive statistics and trend forecasting are applied. Through monthly data on the effects of summer cross-border flows of Romanian tourists to Greece and Turkey and guest workers from Germany through Serbia and Bulgaria to Turkey and back. Special attention is paid to the so-called secondary checkpoints, the capacity of which ensures partial overcoming of the problem of traffic jams in seasonal and other traffic circumstances.

In the third chapter, three benchmark investment projects related to increasing the capacity of the national transport network as part of TEN-T are presented. These projects are, respectively, the meridian routes of the "Ruse - Veliko Tarnovo" highway and the "Vidin - Botevgrad" highway. The preliminary feasibility study of the project to build a bridge over the Danube near Svishtov – Zimnich, at the southernmost geographical point of the river on the map of Europe, brings out arguments in support of the project. The greatly delayed completion of the "Hemus" AM through the prism of the toolkit of "benefits - costs" analysis confirms the positive effects of this project on the economy of Northern Bulgaria. At the end, an overview was made of the possibilities for supporting the cross-border transport network through the tools for cross-border cooperation and development following the example of Bulgaria and Romania.

In the methodological aspect, the research is based on the use and application of comparative analysis, regression-correlation analysis, deduction and induction methods, statistical analysis methods, graphical and tabular systematization of traffic data processing results, etc.

4. Scientific contributions

First. Justification of the relationship between the sustainable development of the road network of the Republic of Bulgaria and the EU with the need for a permanent analysis of the state of the republican and cross-border transport network in order to identify problem areas that require investment in maintenance and capacity expansion.

Second. Derivation of statistical models with correlation matrices based on monthly traffic data for 2023 for the load on the main routes for transit traffic within the integrated national road network of the Republic of Bulgaria in the Trans-European transport network.

Third. Application of a benchmark approach for effective and prospective financial management of investments in existing and new transport facilities and routes while taking into account technological and organizational constraints, with an emphasis on overcoming the backwardness of Northern Bulgaria in terms of the density of the high-class road network as a factor for the growth of the regional GDP.

Fourth. Argumentation of the need for timely rehabilitation and maintenance of the road network, where the delay in repairs and replacement of the wearing asphalt layer increases the subsequent costs for a metric unit of the relevant road section. Poorly maintained roads definitely increase the number of traffic accidents, depreciate the machine park, lead to an increase in accidents and resp. the number of insurance events.

5. Evaluation of the abstract, publications, scientific and scientific-applied results

The prepared abstract of 35 pages fully meets both the structure and content of the objectives of presenting the achievements in the dissertation in a synthesized form. The doctoral student has six publications, which accumulate 44.50 points under the Regulations for the Implementation of the Law on the Development of the Academic Staff in the Republic of Bulgaria. He has participated in five scientific forums.

The author applies a professional scientific approach to confirm the stated research hypotheses. The classic scheme for structuring the dissertation in three chapters is supported by modern methodology and up-to-date empirics. The rules of scientific ethics have been strictly followed, which is reflected in the abstract and the dissertation through a declaration of originality. The bibliography confirms a broad awareness of the achievements of scientific thought in the researched area. The research methods used are at the highest scientific level. The assessment of established scientific contributions is positive. Through them Dr. Lazarov demonstrates qualities and skills to problematize, generalize, research, model and prove. The scientific support from the scientific supervisor Prof. Dr. Stoyan Prodanov is visible at every stage of the research.

6. Criticisms, recommendations and questions

They are not placed.

7. Conclusion

The presented dissertation work for the educational and scientific degree "doctor" has the requirements of the Regulations for the development of the academic staff in the TAE regarding quantitative and qualitative characteristics. The dissertation contains scientific and scientific-applied results that represent an original contribution to science. The dissertation clearly demonstrates that the candidate has in-depth theoretical knowledge of the scientific specialty, as well as abilities for independent scientific and practical-applied research. All this gives me reason to recommend to the scientific jury that the educational and scientific degree "doctor" be awarded to Borislav Petrov Lazarov.

08/01/2024

Reviewer:
(Prof. Dr. Andrey Zahariev)