

STANDPOINT

By: Assoc. Prof. Evgeni Raykov Raykov,
University of National and World Economy,
Scientific Specialty: Finance, money circulation, credit and insurance

Subject: dissertation work for rewarding the educational and scientific degree "Doctor" in scientific specialty: Finance, money circulation, credit and insurance in Dimitar Tzenov Academy of Economics

Author of the dissertation: Todor Dimitrov
Supervisor: prof. Andrey Zahariev
Dissertation theme: Investments in photovoltaic power plant
– financial and environmental aspects

1. General characteristics of the presented dissertation work

The submitted dissertation includes an introduction, an exposition in three chapters, a conclusion, appendices and a bibliography. The total volume of the dissertation is 239 pages, of which 209 are substantive. In the introduction, the dissertation student has presented the relevance of the researched topic, the object and the subject, the goals and tasks of the research. The independent thesis is also formulated, concretized in three separate working hypotheses, the methodology and structure of the dissertation is presented. 151 up-to-date literary sources on the subject of the dissertation were effectively used and cited, of which 115 are in English (some of them also by Bulgarian authors).

2. Positive aspects of the thesis project

- We are presented a considerable in volume dissertation that examines a typical topic for the Bulgarian economy, imposed by the new geopolitical realities in the world economy and definitely requires a sober assessment of the financial effectiveness of these projects and decisions caused by non-economic factors and trends. The proposed thesis sounds more like a theorem, but the practical meaning of its validity is understood precisely

through the auxiliary working hypotheses 2 and 3 presented in the introduction.

- The author is a representative of the senior management of a company from the electricity trading sector, and this has helped to not only correctly define the problem areas in the sector, but also to ensure the adequate connection with the market behavior of prices and the profitability of the imposed investment projects (the artificial market of low-carbon energy) and make relevant statistical analyzes and assessments to clarify the financial sense of "green" energy. An example in this regard is the selection of the day-ahead trading segment for the analysis of the return on investment in photovoltaic capacities and the regression analysis performed with the price behavior in Central and Eastern Europe has a high degree of predictive ability. At the same time, in our country, the regressions do not show a meaningful relationship between significant price fluctuations and traded volumes, which is a concern for the efficiency and meaning of this market segment.
- The exposition is logically consistent, with several specific emphases making an impression, which deviate from traditional guidelines in similar topics - critical analysis of the green deal, state and trends in electricity production in Bulgaria, examination of the phenomenon of zero prices, analysis of systemic and non-systemic risks with investments in photovoltaic capacities, etc.
- The empirical research is of considerable scope, not so much temporal as geographical, but the data are also of high frequency, creating enough accumulation to form real relationships and trends.
- An attempt was made to present a business and financial plan to measure the effectiveness of a specific investment as the object of the analysis.

3. Evaluation of scientific and scientific-applied contributions

The author has singled out 4 contributions, of which I do not quite agree with the last one, which does not find sufficient convincing evidence in the practical third chapter.

4 Evaluation of dissertation publications

The dissertation student has submitted a reference for 5 materials in scientific forums and publications on the topic of the dissertation work, with the relevant identification and actually published. The publications are related to the topic of the dissertation work.

5 Evaluation of the abstract

The abstract is generally prepared in accordance with the requirements. Reference is also included for contributions. The volume is optimal.

6. Critical notes, recommendations and questions

The following notes can be noted about the work presented:

1. The scope can be optimized, although the topic is quite large in scope, as well as the datasets used and the diversity of the results obtained.

2. Despite the precisely defined hypotheses, the practical part fails to show financial efficiency and substantiate the author's third working hypothesis. It is not decisive for proving the more general thesis of the study. The imposition of economic schemes (creating artificial markets) is essentially a source of financial inefficiency. The chosen configuration for the specific investment project does not seem realistic – too long terms for the recovery of the investment, an impossible capital structure (almost bank-like), high systemic and non-systemic risks (a scenario or sensitivity analysis is needed), the purely financial evaluation methodology is missing, rate of return, weighted average cost of capital, cash flow approach, etc. – these things are somehow taken for granted.

3. Financial and environmental analysis are hardly compatible at the micro level in the generation of private benefits. In development, the financial aspect is lost at times. The claim about the leverage effect is also incorrect, since financial leverage (if it is even possible in this way) carries risk and additional income (or loss) only for shareholders, not for project efficiency! Interest rate risk in recent years can also be a factor in conditions of high financial risk.

4. I would like to refer your project assessment to the assessment made in 2009 of the Belene NPP project, which at average long-term price levels for the price of electricity of 140 euros per MWh generates about BGN -3 billion

negative net present value (at investment cost of BGN 11.5 billion at that time and a 50-year period of operation and mixed financing.) How do you accept the more extreme idea that electricity projects are inherently inefficient as private projects, but meaningful from a geopolitical, environmental, public, societal perspective and in relation to national security and the use of natural resources?

5. Conclusion

The presented dissertation work of Todor Georgiev has a high degree of topicality, analyticalness and shows the deep and complex knowledge of the author, which is also related to his professional career and experience. The topic is obviously dissertable, and the presented project is supported by a significant volume of information, which has been skillfully and thoroughly analyzed through statistical methodology. Conclusions are always timely, specific and consistent with the theses and tasks set in the introduction. For me, the most significant benefits of the work are related to the extremely precise definition of the problem and the excellent knowledge of the general market trends and processes of the electricity market and the related regulations and opportunities in the near future, which substantiate the general thesis and give a monumental character to the analysis done. The scope (geographical and temporal) and the results of the statistical analysis give a very accurate picture of the current and upcoming effects of the green transition in general. The economic and financial efficiency of the projects as a result of the green transition is questionable and can hardly be summarized and valued in a macroeconomic way. In this regard, I express my positive opinion and recommend the members of the scientific jury to support the awarding of the ONS "Doctor" to Todor Dimitrov Georgiev.

Sofia 10.05.2024

Signature: /Assoc. Dr. Evgeni Raykov/