OPINION

by: Prof. Dr Victor Yotzov, Macroeconomics Section,
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regarding: procedure for the public defense of the dissertation of doctoral candidate Simeon Stoilov Stoilov on the topic ***„International Transfer of New Technologies and Its Role in the Transition to Innovative and Sustainable Development of the Bulgarian Economy***" for the award of the ESD "Doctor" 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"

This opinion was prepared pursuant to Order No. 874 of 19.12.2025 of the Director of the Economic Research Institute at the Bulgarian Academy of Sciences.

1 Information about the candidate

Simeon Stoilov Stoilov is a doctoral student at the "International Economics" Section of the Economic Research Institute at the Bulgarian Academy of Sciences, in the doctoral programme "World Economy and International Economic Relations". The supervisor of the dissertation is Prof. Dr Tatyana Hubenova-Delissivkova.

The doctoral candidate's research interests are focused on the mechanisms of the international transfer of innovations and technologies (ITIT), the interaction between public policies and private strategies in the absorption of external knowledge, as well as the role of ITIT for technological modernization, enhancing competitiveness, and accelerating the green and digital transition. The submitted academic CV attests to the combination of an academic perspective with practical experience in quality management, the public sector, and an international environment.

According to the attached self-assessment report, the candidate meets the minimum national requirements and the requirements of the Economic Research Institute at the Bulgarian Academy of Sciences for the acquisition of the Educational and Scientific Degree (ESD) "Doctor" (Group A: 50 points; Group G: 44.5 points, with a minimum required 30).

2 General characteristics of the dissertation

The submitted dissertation is 235 pages long and comprises an introduction, three chapters, a conclusion, a bibliography, and a list of statistical sources. The bibliography contains 307 sources (academic publications, international reports, strategic documents, and legal acts), which indicates a broad and systematic literature review and an effort to relate theoretical debates to current policies and practices.

The topic of the international transfer of new technologies is particularly timely in the context of accelerated technological change, growing geo-economic fragmentation, the reconfiguration of global value chains, and the simultaneous unfolding of the green and digital transition. For a small open economy such as Bulgaria's, which operates under conditions of limited domestic research capacity and unfavorable structural characteristics, the question of systematic absorption of external technologies is not only academic but also directly relevant for governance and policy.

In this sense, the study lies at the core of contemporary debates on "technological catch-up", strategic autonomy, industrial policy, and sustainable growth.

In the introduction, the doctoral candidate defines the object and subject of the study, focusing on the mechanisms, institutional logic and economic effects of the international transfer of innovations and technologies. A research thesis is formulated, which considers ITIT as a strategic instrument for accelerated technological modernization, structural transformation and enhancement of Bulgaria's competitiveness. On this basis, five hypotheses are formulated, relating to the impact of the global environment on the structure of transfer flows, the opportunities arising from technological transformation, the need for strategic and coordinated policies to overcome national structural constraints, and the prospect that ITIT can support the building of domestic development capacity and the subsequent export of innovative solutions.

- Clarification of the theoretical and methodological foundations of ITIT and its place in models of economic growth, competitiveness and sustainable development;
- Analysis of the international context (techno-nationalism, technological sovereignty, global and European innovation policies) and identification of relevant models and good practices;
- Assessment of the Bulgarian innovation ecosystem and the institutional framework for ITIT, including the identification of barriers, sectoral potential, and opportunities for integration into European technological networks;

Development of a Ripple Effect Model (REM) for assessing the multiplier effects of ITIT along value chains and formulation of a national roadmap (2025–2040) for its strategic application.

The research toolkit employed includes a critical analysis of scholarly theories and concepts, comparative methods and international benchmarking, institutional and structural analysis, as well as conceptual modelling through the developed Ripple Effect Model (REM). The empirical part builds on official statistical sources and indicators (e.g., R&D expenditure, patent activity, energy intensity, firms' innovation performance), complemented by an analysis of European strategic documents and national legal acts. The effort towards interdisciplinary integration between economic analysis and managerial approaches deserves a positive assessment, as it corresponds to the practical orientation of the topic.

The abstract presents, in a synthesized manner, the objectives, methodology, structure, and results of the dissertation and can be considered to accurately reflect the main propositions and conclusions of the doctoral work. At the same time, for greater accountability to the scholarly community, it would be useful for the abstract to emphasize more clearly the logic of testing the hypotheses and the way in which the REM is calibrated and used as an instrument for assessment and strategic planning.

3 Structure and content of the dissertation

Chapter I („***Theoretical and methodological premises and analytical foundations of the study***") builds the conceptual framework of the dissertation. Within the literature review, the main strands in the theory of innovation and technological diffusion (including the systems approach to innovation and the concept of a national innovation system) are presented, along with key concepts, definitions, and mechanisms of ITIT. Particularly useful are the distinctions among different transfer channels (FDI, licensing, scientific cooperation, participation in global value chains, acquisitions, etc.), as well as the emphasis on absorptive capacity and the institutional environment as a

necessary precondition for turning transfer into sustainable productive and technological competences.

Chapter II („***Bulgaria in the innovation environment of the EU and the world***“) has a distinctly diagnostic and situational character. On the basis of comparative indicators, Bulgaria's position within the EU-27 and relative to other countries is outlined along key dimensions of the innovation process (R&D expenditure, patent activity, innovation outcomes, enterprise structure, etc.). The regulatory and institutional environment for ITIT in Bulgaria is examined, including the role of state policy, strategic vision, and participation in European programmes.

Chapter III („***Strategic approaches to ITIT: models, effects and national perspective***“) presents the most original part of the work. First, conceptual frameworks for assessing the multiplier ("ripple") impact of ITIT and the prerequisites for its unfolding along value chains are discussed. The doctoral candidate then provides a comparative reading of historical and international parallels, including industrial strategies and models of public–private interaction. The core methodological contribution is the development of a Ripple Effect Model (REM), including its structure, indicator framework, and methodological steps for application—from preliminary diagnostics and scenarios, through operational monitoring, to interpretation of effects.

In the conclusion, the main results of the individual chapters are systematized; conclusions and policy recommendations are formulated; and the scientific and applied contributions are summarized. The recommendations logically follow from the diagnostic findings and the proposed REM framework, with emphasis on the need for institutional strengthening, increasing absorptive capacity, and refining sectoral priorities in line with European technological networks.

Overall, the structure of the dissertation is logically consistent and internally coherent. The chapters have relative autonomy, yet they are unified by a common purpose and analytical focus. From the perspective of academic rigor, it may be recommended that, in the future development of the study, the REM be subjected to more detailed empirical verification (e.g., through sectoral case studies, pilot implementation of the indicator framework, and sensitivity of results to the underlying assumptions). These remarks do not undermine the value of the work; rather, they delineate opportunities for its further development in subsequent scholarly publications and project activity.

4 Scientific and applied contributions

The dissertation exhibits clearly identifiable originality, stemming primarily from the attempt to move from a descriptive–diagnostic study of ITIT to the construction of a toolkit for the strategic management of transfer processes and the assessment of their multiplier effects in a national context. The originality is manifested both at the level of the conceptual framework (combining approaches from the economics of innovation, institutional economics, and strategic management) and at the level of the proposed applied solutions (the REM and a roadmap for the period 2025–2040).

More specifically, the contributory elements may be systematized in the following directions:

I. Theoretical contributions: (1) key theoretical approaches to ITIT have been systematized and conceptualized, including distinctions among channels, mechanisms and actors; (2) an analytical link has been established between ITIT and the structural transformation of the economy in the context of the green and digital economy; (3) a concept of the multiplier ("ripple") impact of ITIT

along value chains has been developed as a basis for assessing the diffusion of effects beyond the primary transfer.

II. Empirical contributions: (4) a comparative analysis of international and national models of ITIT has been conducted, identifying relationships between institutional coordination, human capital, innovation infrastructure and the effectiveness of transfer; (5) structural constraints and unexploited opportunities in the Bulgarian economy have been diagnosed with regard to the institutional architecture, regional innovation ecosystems and participation in European technology networks.

III. Applied contributions: (6) an integrated conceptual-analytical framework for the strategic management of ITIT in Bulgaria has been developed, combining a model for assessing multiplier impact (REM), an institutional coordination logic, and a strategic implementation roadmap; (7) a managerial toolkit for the strategic and operational management of ITIT has been proposed, including mechanisms for capacity building, selection, adaptation and protection of technologies; (8) a model has been formulated for transforming Bulgaria from a passive recipient into an active participant and potential exporter of innovative solutions, with a long-term effect on competitiveness and sustainable economic growth.

The contributions are convincing due to the clear linkage between the research questions posed, the hypotheses, and the structured exposition, as well as due to the effort to propose a methodological instrument (REM) that 'translates' theoretical propositions into an applicable policy framework. Equally important is the fact that the proposed roadmap addresses not only the technological aspect of transfer, but also the conditions for institutional coordination, monitoring and sustainability—components that often remain peripheral in traditional analyses.

5 Other publications and participation in scientific forums

The main results of the dissertation have been validated through publication activity that is thematically close to the research and consistently develops key elements of it (science–business cooperation, regional potential for technological transfer, economic dimensions of the green transition, multiplier effects of transfer). The publications are both single-authored and co-authored, and include participation in scientific forums and publication in a peer-reviewed outlet. They attest to a sustained interest in the topic and to the ability to present results to the scholarly community.

- Stoilov, S. (2020). Strategic cooperation between science and business in the transfer of innovations and technologies: a factor for sustainable development. In: Economic Science, Education and the Real Economy: Development and Interactions in the Digital Era. Proceedings of the Jubilee International Scientific Conference dedicated to the 100th anniversary of the founding of the University of Economics – Varna, Vol. I. Varna: Publishing House "Science and Economics", University of Economics – Varna, pp. 555–566. ISBN: 978-954-21-1020-0.
- Stoilov, S. S. (2020). The potential of Bulgaria and the Western Balkans to serve as a global center for innovations and international technology transfer. KNOWLEDGE – International Journal, Vol. 43, No. 1, pp. 81–88. Skopje: Institute of Knowledge Management. ISSN 2545-4439 (print), ISSN 1857-923X (online).
- Stoilov, S. (2024). Forecast economic burdens for the private sector in the implementation of the green transition. Economic Development and Policies: Realities and Prospects. National and European Challenges of the Transition to a Green Economy. Sofia: Prof. Marin Drinov Publishing House, Bulgarian Academy of Sciences, pp. 211–219. ISBN: 978-619-245-407-4.

- Bobeva, D., Nestorov, N., Pavlov, A., Stoilov, S. (2024). Evaluation of the economic impact of a country's accession to the Schengen Area – the case of Bulgaria. Economic Thought, 69(2), 139–163.
- Stoilov, S. (2025). The multiplier effect of international technology transfer and diffusion of sustainable growth in the economy. In: Investments in the Future – 2025. Proceedings of the Fifteenth International Scientific Conference. Varna: Varna Scientific and Technical Unions, pp. 129–138. ISSN 1314-3719.

6 Conclusion

On the basis of the overall review of the dissertation, the abstract, the statement of contributions and the publications, I consider that the work constitutes an independent scholarly study with distinct theoretical and applied value. The doctoral candidate demonstrates thorough knowledge of the literature and current policies in the field of innovation and technology transfer, an ability for systematization and critical analysis, and the capacity to propose original models and managerial solutions. The objectives set have been achieved in a logically consistent exposition, and the contributions are relevant to the scientific field and meet the requirements for the award of the Educational and Scientific Degree "Doctor" in professional field 3.8. Economics. I propose that the esteemed scientific jury award Simeon Stoilov Stoilov the Educational and Scientific Degree "Doctor".

Prof. Dr Victor Yotzov