Transilvania University of Brașov
INTERDISCIPLINARY DOCTORAL SCHOOL

ADMISSION TO DOCTORAL STUDIES Session September 2025

Field of doctoral studies: FINANCE
Doctoral supervisor: Prof. dr. Marius Sorin DINCĂ

TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

TOPIC 1: Integrated models for the analysis of green finance and fiscal policies in the context of sustainable development

Contents / Main aspects to be considered

1. Introduction

1. Justification of the theme (climate crisis, European Green Deal, EU taxonomy, pressure on public budgets).
2. Definition of key terms: green finance, green fiscal policies, sustainability.
3. Objectives and hypotheses of the research.
4. General methodology.

2. Theoretical and conceptual framework

1. Relevant economic theories: ecological economics, theory of optimal taxation, theory of externalities.
2. The evolution of the concept of green finance (green bonds, ESG investing, green public funds).
3. The role of tax policies in the green transition: green taxes, subsidies, tax credits.
4. The correlation between tax incentives and investment behaviour in green sectors.

3. Fiscal policies and green financial instruments – comparative study

1. Comparative analysis between different countries/areas (e.g. EU, USA, China, emerging economies).
2. Case studies: carbon taxes, renewable energy subsidies, electric vehicle incentives.
3. The impact of green taxation on budgetary balance and social equity.

4. Integrated models – methodological proposal

1. Construction of an integrated econometric model:
    1. Inputuri: fiscal politicians, financial instruments, ESG indicators.
    2. Outputs: economic growth, GHG emissions, employment, redistribution.
2. Possible use of computational models:
    1. DSGE with green externalities
    2. Computable General Equilibrium (CGE)
    3. Machine learning for predicting the fiscal impact of green policies

5. Empirical application

1. Application of the model to Romania and/or regional comparison (Central and Eastern Europe).
2. Simulation of scenarios: "green tax shift", increasing the share of green bonds, implementing a carbon tax.
3. Assessment of fiscal sustainability and impact on key economic sectors.

6. Conclusions and recommendations

1. Integrated assessment of the effectiveness of fiscal and financial policies in the green transition.
2. Public policy proposals: fiscal-optimal mix according to climate and social objectives.
3. Limitations of research and future directions: digitization of green taxation, integration of artificial intelligence in modeling.

Suggested methodology

1. Quantitative analysis: multiple regressions, panel data, econometric models or CGE.
2. Public policy simulations with models calibrated on national/European data.
3. Qualitative analysis: case studies, interviews with decision-makers, analysis of policy documents.

Recommended bibliography:

1. Miranda-Lescano, R., Leonel, M.-G., & and Roca-Sagalés, O. (2024). Redistributive efficiency of fiscal policy: The role of decentralization and good governance. Regional & Federal Studies, 34(2), 189–216. https://doi.org/10.1080/13597566.2022.2092844
2. Ye, T., Xiang, X., Ge, X., & Yang, K. (2022). Research on Green Finance and Green Development Based Eco-Efficiency and Spatial Econometric Analysis. Sustainability, 14(5), 2825. https://doi.org/10.3390/su14052825
3. Gherghina S., C., (2023), Quantitative Methods in Finance Exploring the Drivers of Sustainable Economic Growth in the EU, Sustainable Finance, Springer, ISBN 978-3-031-43863-9, https://doi.org/10.1007/978-3-031-43864-6
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Canada, 2005; Available online: https://www.cbd.int/financial/privatesector/several-privatebestpractices.pdf
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12. Zhang S., Wu Z., Wang Y., and Hao Y., (2021) Fostering green development with green finance: an empirical study on the environmental effect of green credit policy in China, Journal of Environmental Management. 296, 113159, https://doi.org/10.1016/j.jenvman.2021.113159
13. Falcone P. M., Environmental regulation and green investments: the role of green finance, International Journal of Green Economics. (2020) 14, no. 2, https://doi.org/10.1504/ijge.2020.109735
14. Hemanand, D., Mishra, Nilamadhab, Premalatha, G., Mavaluru, Dinesh, Vajpayee, Amit, Kushwaha, Sumit, Sahile, Kibebe, (2022) Applications of Intelligent Model to Analyze the Green Finance for Environmental Development in the Context of Artificial Intelligence, Computational Intelligence and Neuroscience, 2977824, https://doi.org/10.1155/2022/2977824
15. Alahmadi, M. (2024). Optimizing Data Quality for Sustainable Development: An Integration of Green Finance with Financial Market Regulations. Sustainability, 16(23), 10418. https://doi.org/10.3390/su162310418
16. Ravita Kharb, Charu Shri, Pragati Singh, Shabani Bhatia & Neha Saini (2024) Modelling the barriers of green financing in achieving environmental sustainability: an analysis using TISM. Environment, Development and Sustainability, https://doi.org/10.1007/s10668-024-05266-1
17. Madsen, J. B., Islam, M. R., & Doucouliagos, H. (2018). Inequality, financial development and economic growth in the OECD, 1870–2011. European Economic Review, 101, 605–624. https://doi.org/10.1016/j:euroecorev.2017.11.004

Prerequisites / Remarks:

☐x Scientific Doctorate (full-time only)
☐ Professional Doctorate (full-time or part-time)

☐x without tuition fee (state budget funded)
☐x with tuition fee or with funding from other sources than the state budget

Doctoral supervisor,

Prof. Dr. Marius Sorin DINCĂ

Signature

Coordinator of the field of doctoral studies,

Prof. Dr. Marius Sorin DINCĂ

Signature