

## TOPICS FOR DOCTORAL (PHD.) THESIS FOR ACADEMIC YEAR 2023/2024

### Field of study: 8. Economics and Management Study program: *Finance*

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| no. 1  | Supervisor   | <b>doc. Ing. Alena Andrejovská, PhD.</b> |
| Title  | TAX COMPETITION OF THE EU MEMBER STATES IN THE CONTEXT OF CORPORATE TAXATION   |  |
| Detailed description of the topic (annotation or abstract) | EU countries are trying to increase their competitiveness and tax attractiveness to attract foreign investors. Therefore, the dissertation will focus on the issue of effective corporate taxation and its impact on tax competition within the member states of the European Union. The work will point out the differences between the statutory and effective tax rates and further analyze the methods and determinants of the impact on tax competitiveness in corporate taxation in EU member states. Last but not least, the work will evaluate the impact of individual determinants on tax competitiveness concerning the structure of tax systems of individual countries, which are heterogeneous and lead to differences and competition between EU countries. |  |

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| no. 2  | Supervisor  | <b>doc. Ing. MVDr. Ján Buleca, PhD.</b> |
| Title  | MONITORING AND FORECASTING THE EFFECTS OF THE BUSINESS CYCLE ON AGRICULTURAL PRODUCTION IN THE EU   |   |
| Detailed description of the topic (annotation or abstract) | Monitoring and predicting business cycles become particularly important during the global economic crisis. In addition to providing relevant data to ensure the stability of the economic environment, they are closely linked to issues of sustainability, security and self-sufficiency of countries in terms of agricultural production and related food production, as necessary commodities to ensure the nutrition of the population. The dissertation thesis will focus on the analysis and comparison of current composite indicators to predict the impact of the business cycle on the agri-sector, analysis of their predictive ability within the European Union, analysis of the impact of available factors on the business cycle, and in the last part a proposal of a leading composite indicator for EU countries. |   |

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| no. 3  | Supervisor   | <b>doc. Ing. MVDr. Ján Buleca, PhD.</b> |
| Title  | PRODUCTION POTENTIAL AND EFFICIENCY OF EUROPEAN AGRICULTURAL ENTERPRISES   |   |
| Detailed description of the topic (annotation or abstract) | <p>The volume of the world's population, together with the increase in its income, reflects the increased need to provide essential food components. Consumption of agricultural products, its quantity and also quality reflect the level of national wealth. Exports of agricultural production represent a significant part of the agricultural and food trade.</p> <p>Goals:</p> <ul style="list-style-type: none"> <li>• To define the production potential of enterprises in selected sectors of agricultural production.</li> <li>• To analyse the current economic situation of agricultural production in selected countries of the world.</li> </ul> |   |

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|  | <ul style="list-style-type: none"> <li>• To compare the parameters of agricultural production efficiency in the selected countries.</li> <li>• To propose a classification of agricultural holdings according to their production potential.</li> </ul> |
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| no. 4 | Supervisor   | <b>doc. Ing. MVDr. Ján Buleca, PhD.</b>   |
|       | Title  | OPTIMIZATION OF THE LOCAL ENERGY SYSTEM IN THE CONTEXT OF CLIMATE CHANGE IMPACTS  |
|       | Detailed description of the topic (annotation or abstract) | <p>The energy system represents a significant part of the country's wealth. The annual costs of the energy system (investments in technology, purchase of energy) cover a significant part of GDP. There are just few human activities without energy consumption. Investigating possible variants of energy future development in the context of climate change, based on contrasting scenarios, will allow energy policymakers to avoid costly mistakes in decision-making. The energy model can be used at the local level as a tool for territorial planning or regional economic development, for modeling economic exchanges between markets, or on a global scale for the study of climate change.</p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• define the theoretical foundations of energy models and framework methodologies for modeling energy systems.</li> <li>• analyze the current energy situation in the selected area (the city of Košice, or the Slovak Republic).</li> <li>• compare the impacts of climate change in selected countries.</li> <li>• propose an energy model based on MARKET ALlocation (MARKAL) for the monitored area (the city of Košice or the Slovak Republic).</li> </ul> |

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| no. 5 | Supervisor   | <b>doc. Ing. Radoslav Delina, PhD.</b>   |
|       | Title  | AUTOMATION OF INDUSTRIAL PROCUREMENT PROCESSES   |
|       | Detailed description of the topic (annotation or abstract) | <p>Digital transformation in society and industry brings challenges that every organisation must respond to across the full scope of processes. One of the significant processes in the industry is the spend and supply chain management process, which in its complexity brings not only a huge potential for automation of decision-making processes, its self-validation, self-regulation but also a number of risks and limitations that need to be understood to support the development of applied data science and the development and deployment of data automation services.</p> <p>The topic will therefore focus on understanding the opportunities for automating decision processes at different stages of the procure-to-pay process from a "category management" perspective as well as from the perspective of developing procurement innovation and validating value to the organization and society. There will be a need to understand decision processes, responsibilities, the need for data structure and levels of acceptable data quality and decision accuracy, acceptance and resistance factors of process users and other determinants of automation development in this area. It will also be necessary to understand the opportunities, risks, and limitations of AI for development in this area, including the context of developing various GPT tools and algorithms</p> |

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|  | for specific tasks. The thesis will be both methodologically and application oriented, using a specific example in a selected company. |
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| no. 6  | Supervisor   | <b>doc. Ing. Radoslav Delina, PhD.</b> |
| Title  | DATA DRIVEN GREEN AND SUSTAINABLE SUPPLY CHAIN DEVELOPMENT IN THE INDUSTRY   |  |
| Detailed description of the topic (annotation or abstract) | <p>Digital transformation in society and industry brings challenges that every organisation must respond to across the full breadth of processes. One of the significant processes in the industry is the spend and supply chain management process, which in its complexity brings not only a huge potential for automation of decision-making processes, its self-validation, self-regulation but also several risks and limitations that need to be understood in the development of applied data science and the development and deployment of data automation services. In the context of this development goes hand in hand with the development of a sustainable economy based on various green indicators, mainly emission reduction.</p> <p>The topic will therefore focus on understanding the possibilities of data driven decision making processes and the potential of automating the calculation and validation of these indicators, with an emphasis on strategic sourcing, market research and negotiation as well as in terms of developing the procurement of green innovations and the validation of the value to the organisation and society. There will be a need to understand the decision-making processes in this area, responsibilities, linkages to government and corporate policies and directives, capabilities of existing data infrastructure and levels of acceptable data quality for decision-making purposes. The thesis will be oriented towards the development of a methodology for data-driven decision making both in terms of application and application to a specific example of a selected company.</p> |  |

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| no. 7  | Supervisor   | <b>doc. Ing. Radoslav Delina, PhD.</b> |
| Title  | DATA DRIVEN DECISION MAKING IN SUPPLY CHAIN RISK AND INNOVATION MANAGEMENT IN THE INDUSTRY   |  |
| Detailed description of the topic (annotation or abstract) | <p>Digital transformation in society and industry brings challenges that every organisation must respond to across the full width of industrial processes. One of the significant processes in the industry is the spend and supply chain management process, which in its complexity brings not only a huge potential for automation of decision-making processes, its self-validation, self-regulation but also a number of risks and limitations that need to be understood in the development of applied data science and the development and deployment of data automation services. One of the important phases of decision making is understanding supply chain risks, understanding the innovation capacity of the supply market and then optimizing the spend management strategy.</p> <p>The topic will therefore focus on understanding the possibilities of data-driven decision making in the area of supplier risk, "category management", as well as in terms of understanding and diagnosing the</p> |  |

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|  | <p>innovation potential of the supply chain and validating the value to the organisation and society. There will be a need to understand existing data structures and how they can be transformed into knowledge-based data services and how they can be optimally used for related decision-making tasks. It will also be necessary to understand the opportunities, risks and limitations of artificial intelligence for development in this area, automating "category management" and designing automated decision-making strategies in procurement. The thesis will be both methodologically and application oriented using a specific example of a selected company.</p> |
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| no. 8  | Supervisor   | <b>doc. Ing. Júlia Ďurčová, PhD.</b> |
| Názov témy   | PRIAME ZAHRANIČNÉ INVESTÍCIE A INOVAČNÁ SCHOPNOSŤ KRAJINY V DYNAMICKY MENIACICH SA PODMIENKACH   |                                      |
| Title  | FOREIGN DIRECT INVESTMENT AND THE INNOVATIVE CAPACITY OF THE COUNTRY IN DYNAMICALLY CHANGING CONDITIONS  |                                      |
| Detailed description of the topic (annotation or abstract) | <p>In the dynamically changing conditions of the business environment influenced by Industry 4.0, as well as geopolitical changes and the effects of the pandemic, the need to react to these changes has accelerated. FDI, as a representative of international business capital, is an important factor affecting development and changes in the domestic business environment as well. Individual stages of the industrial revolution changed production, services and influenced FDI already in the past. But how does the current stage of the industrial revolution affect FDI?</p> <p>The question is, what is important - what specific country's – region's factors - that support direct foreign investments aimed at innovation and innovative activity, and vice versa, which have a contradictory effect. Also, how changes in the domestic business environment (rising wage costs, demographics, skills, etc.) affect this process. The contribution could also be a comparison of the situation within EU countries, what differences exist and what recommendations for European macroeconomic policy could result.</p> |                                      |

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| no. 9  | Supervisor  | <b>doc. Ing. Júlia Ďurčová, PhD.</b> |
| Title  | OFFSHORING AND ONGOING STRUCTURAL CHANGES IN THE GLOBAL ECONOMY AND THEIR IMPACTS ON THE LABOR MARKET IN EU COUNTRIES   |                                      |
| Detailed description of the topic (annotation or abstract) | <p>The linkages between industries are strong not only within a given country but also across a region, even within countries from other continents. Measures and changes introduced in one country, region, can spread across countries and have different effects. After 2000, an important production cluster emerged within the countries of Central Europe. This cluster focuses on production in industries that are strongly export oriented. Therefore, external shocks (for example, technological change, environmental regulations, geopolitical tensions, protectionism, transport problems, etc.), which may also originate from another region, can be strongly transmitted through industry linkages and affect the domestic economy and domestic labor market of these countries. The</p> |                                      |

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|  | same shocks can therefore manifest themselves differently in EU countries and labor markets. The goal will therefore be to investigate how offshoring and GVC affect the labor market in EU countries. |
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| no. 10   | Supervisor  | <b>Prof. Dejan Eric, PhD.</b> |
| Title  | MERGER AND ACQUISITION (M&A) PERFORMANCE OF EU BANKS  |                               |
| Detailed description of the topic (annotation or abstract) | <p>The theoretical part of dissertation should start with the theoretical background in area of M&amp;A performance analysis. Focus on research must be on EU banks and their growth strategies. Some of the research aspects could be researching reasons and motives for M&amp;A of EU banks, analyzing current trends in banking M&amp;A and summarizing and critically discussing different approaches in M&amp;A bank performance analysis.</p> <p>The empirical part of dissertation must cover precise determination of bank sample and methodology of research, analysis of data, elaboration of result and discussion. If it possible candidate can try to present some of prediction of future trends in area of M&amp;A of EU banks.</p> |                               |

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| no. 11   | Supervisor   | <b>doc. Ing. Kristína Kočišová, PhD.</b> |
| Title  | QUALITY OF INTEREST RATE PASS-THROUGH IN EUROPEAN UNION COUNTRIES  |  |
| Detailed description of the topic (annotation or abstract) | <ul style="list-style-type: none"> <li>Summarize and critically discuss recent theoretical approaches examining the quality of the interest rate pass-through.</li> <li>Analyze the development of central banks interest rates, interest rates on the interbank market, and interest rates provided by commercial banks.</li> <li>Analyze the impact of selected bank-level variables and macroeconomic variables on the quality of the interest rate pass-through in the European Union countries.</li> <li>Evaluate the results of the analysis.</li> </ul> |  |

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| no. 12   | Supervisor   | <b>doc. Ing. Kristína Kočišová, PhD.</b> |
| Title  | SYSTEMIC RISK IN THE EUROPEAN BANKING SECTOR   |  |
| Detailed description of the topic (annotation or abstract) | <ul style="list-style-type: none"> <li>Critically evaluate existing theoretical concepts for systemic risk analysis.</li> <li>Define the traditional methods used to measure systemic risk. Apply selected techniques to a set of banks.</li> <li>Analyze the impact of the pandemic, banking and macro variables on the evolution of the systemic risk of the analyzed banks in the European Union countries.</li> <li>Evaluate the results of the analysis.</li> </ul> |  |

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| no. 13   | Supervisor  | <b>doc. Ing. Lenka Maličká, PhD.</b> |
| Title  | SPENDING EFFICIENCY OF MUNICIPALITIES   |                                      |
| Detailed description of the topic (annotation or abstract) | The decentralized allocation function of public finances is usually constrained legislatively and notably by the volume of municipal budgets. The budget principle of efficiency advises the efficient use of |                                      |

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|  | public resources. Spending efficiency might be interpreted as the ability to minimize a municipality's per capita spending to keep providing a fixed level of local public goods (Afonso and Venâncio 2022). Related foreign scientific literature quantifies the spending efficiency of municipalities as efficiency scores using the DEA (Geys and Moesen 2009; Da Cruz and Marques 2014; Drew, Kortt, and Dollery 2015; Afonso and Venâncio 2022, the input-oriented vrsDEA is frequently used). To identify the determinants of spending efficiency, efficiency scores are involved as dependent variables to the panel regression, while regressors are of demographic, socio-economic, or institutional nature. |
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| no. 14   | Supervisor   | <b>doc. Ing. Lenka Maličká, PhD.</b> |
| Title  | <b>FISCAL STRESS AND FISCAL DISCIPLINE OF MUNICIPALITIES ACCORDING TO THE SIZE CATEGORY</b>  |                                      |
| Detailed description of the topic (annotation or abstract) | Municipalities face fiscal stress due to several factors as external shocks (economic and non-economic), tax reforms, demographic changes, or investment projects. Fiscal stress affects their fiscal behavior and disturbs their functioning. In line with the fiscal stress and fiscal discipline, municipal indebtedness is predominantly analyzed (Ribeiro and Jorge 2014; Balaguer-Coll, Prior and Tortosa-Ausina 2016; Ehalaiye, Botica-Redmayne, and Laswad 2017). It is assumed, that smaller municipalities face higher financial vulnerability, but their access to loans is limited by their ability to answer for debt with future revenues. Empirical research mainly focuses on determinants of municipal indebtedness. The panel regressions are usually run with regressors of demographic, socio-economic, or institutional nature. Curious is the contribution of Kluza (2017), where municipalities with worsened risk profiles are identified using DEA. |                                      |

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| no. 15   | Supervisor   | <b>prof. Ing. Rajmund Mirdala, PhD.</b> |
| Title  | <b>LABOUR MARKET EFFICIENCY AND SOUND PUBLIC FINANCE IN THE EUROZONE</b>   |   |
| Detailed description of the topic (annotation or abstract) | In recent years, there has been a significant deterioration in the sustainability of public finances in the vast majority of eurozone member countries. Fiscal incentives and negative impacts of cyclical factors deepened fiscal deficits and accelerated public debts. In the context of the distorting effects of pandemic measures on the production potential of economies, but without significant impacts on labor markets, the attention of economists was naturally directed to the examination of the interrelationship between the sustainability of public finances and the development of labor markets. |   |

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| no. 16   | Supervisor  | <b>prof. Ing. Rajmund Mirdala, PhD.</b> |
| Title  | <b>(DE)GLOBALIZATION, FOREIGN TRADE IMBALANCES AND INCOME / WEALTH INEQUALITIES</b>   |   |
| Detailed description of the topic (annotation or abstract) | The broader context of events and processes associated with specific demand, but especially supply manifestations of pandemic restrictions or events or processes associated with them, is currently being contrasted with the decades-long process of internationalization and globalization |   |

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|  | of economic processes. The dynamization of the deglobalization process with impacts on a wide range of factors affecting international production chains will have a natural impact on the fundamental aspects of the formation of (global) foreign-economic imbalances and pension and wealth inequalities on a global scale, which have been formed for many years under the influence of intensifying globalization. |
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| no. 17   | Supervisor   | <b>prof. Ing. Rajmund Mirdala, PhD.</b> |
| Title  | ADOPTION AND IMPLICATIONS OF CBDCs AND CRYPTOCURRENCIES  |   |
| Detailed description of the topic (annotation or abstract) | The intention to introduce central bank digital currencies (CDBC) and their implementation in a domestic and international context requires a detailed assessment of risks and opportunities. CDBC themselves only strengthen the perception of the element of centralization in the traditional monetary system. The increase in the adoption of cryptocurrencies and, in this context, the growing importance of the decentralized financial system thus represents a potential alternative to CDBC, the relevance of which naturally increases in the context of the implementation of the regulatory framework for the crypto-asset market in the near future. |   |

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| no. 18   | Supervisor   | <b>prof. Ing. Rajmund Mirdala, PhD.</b> |
| Title  | THE ROLE OF GOVERNMENT REGULATIONS IN ADOPTING CRYPTOCURRENCY IN GLOBAL MARKETS  |   |
| Detailed description of the topic (annotation or abstract) | The adoption of cryptoassets and blockchain solutions is significantly limited by the absence of a regulatory framework. Especially in the field of finance and banking, crypto assets and decentralized blockchain solutions represent a potentially relevant alternative to the traditional centralized financial system. Fundamental analysis of crypto-assets and blockchain solutions indicate a significant penetration potential, which, however, is currently severely limited by the absence of a legislative and regulatory framework for the area of crypto-asset markets and decentralized blockchain solutions. |   |

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| no. 19   | Supervisor   | <b>prof. Ing. Rajmund Mirdala, PhD.</b> |
| Title  | FUNDAMENTAL, TECHNICAL AND PSYCHOLOGICAL ANALYSIS OF THE CRYPTOCURRENCY MARKET   |   |
| Detailed description of the topic (annotation or abstract) | Over the past more than ten years, the market with digital assets (cryptocurrencies) has gone through almost all stages of the development of an unconventional market from the point of view of its perception by the government, financial or corporate sectors (ignorance, contempt, adversity, regulation), which can be paraphrased by M. Gándi's statement "First they ignore you, then they laugh at you, then they fight you, then you win". The development potential of the cryptocurrency industry is often compared to the penetration and global adoption of the Internet and ICT in the 1990s. A comprehensive fundamental, technical and psychological analysis of the cryptocurrency market will provide a sound basis for clarifying the potential for further direction in the development of the cryptocurrency market. |   |

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| no. 20   | Supervisor  | <b>Prof. Srdjan Redzepagic, PhD.</b> |
| Title  | DEVELOPMENT OF EUROPEAN ECONOMICS: „TRENDS, CHALLENGES, AND OPPORTUNITIES"  |                                      |
| Detailed description of the topic (annotation or abstract) | This topic aims to summarize and critically discuss recent economic changes and development of European Union economies. Thru it it will be given the analyze of selected economic policies and projects for the future, but also effects of the Euro Area member countries. It is aimed to identify economic problems in EU member states, thru proposal of alternative measures for reducing inequality within actual member states. Financial analysis is desired to be done too. Previsions, estimations, analysis are the main parts of this work. |                                      |

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| no. 21   | Supervisor  | <b>doc. Ing. Marianna Siničáková, PhD.</b> |
| Title  | MONETARY POLICY IN THE CONTEXT OF MULTIPLE SHOCKS AND CENTRAL BANK DIGITAL CURRENCY.  |  |
| Detailed description of the topic (annotation or abstract) | The aim of the thesis will be to evaluate the effectiveness of the single monetary policy from the point of view of the individual member countries of the Eurozone. The partial objectives of the work will be: <ul style="list-style-type: none"> <li>- analyze the period of application of non-standard monetary policy and quantitative easing,</li> <li>- consider the possibilities of applying these procedures in the future in the context of multiple shocks,</li> <li>- evaluate the advantages and disadvantages of introducing the digital currency of the central bank,</li> <li>- determine the current equilibrium interest rates and adequate reaction functions of the ECB in the Eurozone,</li> <li>- evaluate the "forward guidance" approach in conditions of restrictive monetary policy.</li> </ul> |  |

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| no. 22   | Supervisor  | <b>doc. Ing. Marianna Siničáková, PhD.</b> |
| Title  | OVERALL INDEBTEDNESS AND SUSTAINABILITY OF PUBLIC FINANCE IN THE EU   |  |
| Detailed description of the topic (annotation or abstract) | The aim of the thesis will be to analyse and assess developments in external and internal indebtedness and the sustainability of public finance of the EU countries, with an emphasis on the euro area member countries. The presence and implications of twin, triple and other multi-deficits and their impact on the development of the euro area as an optimal currency area will be evaluated. The persistence and deepening of these imbalances contributes to a slowdown in nominal and real convergence, to perpetuating the middle-income trap of newer EU or euro area members, and to asynchronous developments in member states' economic cycles. |  |