

Applications of Mathematics and Statistics in Economics (23rd AMSE 2021) International Conference

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After a year-long pause caused by the Covid-19 epidemic, an international conference called *Applications of Mathematics and Statistics in Economy* (AMSE) took place again this year. Since possibilities to travel were uncertain, the conference was limited to one day (2 September 2021) and an online form. This year's conference was organised by the Department of Statistics from the Faculty of Management and Computer Science, Wrocław University of Economics. Over 40 experts from the Czech Republic, Slovakia, Poland, and other countries representing the Prague University of Economics and Business in Prague, the Matej Bel University in Banská Bystrica, the Wrocław University of Economics, the University of Pardubice, the Czech Statistical Office, the Comenius University in Bratislava, the University of California in Davis, and the School of Petroleum Management in Gandhinagar participated in the conference.

It is characteristic for this international conference that knowledge and experience are exchanged, the latest results of research are presented, and new procedures and methods are discussed there. Usual working meetings of representatives of cooperating workplaces from Prague, Wrocław, and Banská Bystrica as to further heading of scientific and pedagogical cooperation took place in the evening before the conference, also in an online form.

Meetings of the conference took place in five sections as follows: Macroeconomic issues, Microeconomic and financial issues, Old age issues and pension market, Application of statistical methods in economics, Application and history of statistics. It is very difficult to highlight the most interesting papers; therefore let me point out just some of them, which I consider to be of good quality, interesting, and innovative in terms of methodology. Even bigger attention should be paid to those papers the authors of which are young researcher workers.

In the *Macroeconomic issues* section, the biggest attention was caught by the paper called *Aligning the loan-to-deposit ratio with the needs of macroprudential regulation* (by authors Zimková, E. and Boda, M.). The authors proposed to expand the traditional loan-to-deposit (LTD) ratio as a metric of liquidity and fund towards measuring attainment in financial inter-mediation. The proposed metric, financial intermediation measure (FIM), is a normative indicator and amends the descriptive nature of the LTD ratio, and is thus more suited to the needs of macroprudential regulation of financial systems. The metric is grounded in ideas of data envelopment analysis and is developed in conjunction with a data set on structural indicators provided by the World Bank. Utilization of the FIM was demonstrated

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for 48 financial systems of the world using data from 1993 to 2016 under different classifications applied to financial systems. The demonstration shows that the FIM is useful also for performance assessments of market-based financial systems without distinction.

The section of *Microeconomic and financial issues* offered four papers; among them, the biggest attention undoubtedly belongs to a paper of young authors (Fischerová, J., Vincenc, J., Ptáčková, V.) called *Using the business survey and other relevant sources to improve the estimation of financial margins on buying and selling transactions in Czechia*. The authors established the aim of their research work as follows: to find suitable data sources in the area of official statistics that should help solve the question of appropriate capturing of financial margins in the Czech national accounts according to requirements of European institutions (especially in the relation to non-residents). In order to achieve that, they will go through the available data sources about the financial institutions and analyse the current situation in Czechia. Collected information will be helpful for the literature review about the mentioned issue. After that they will evaluate the opportunity to use the *Czech Business and Consumer Survey* (BCS) as the background data source for the additional voluntary questionnaire focused on institutions which filled in the BCS corresponding data. Investment questionnaire under the BCS in the selected services with the edited form will be released for the first time during autumn 2021. The data where respondents evaluate and estimate their investments based on a qualitative scale can be considered as a suitable additional source that will quickly show economic development in the field of financial margins.

Papers in the third section (*Old age issues and pension market*) were devoted to issues related to the population ageing and pension insurance. The paper called *Marriage and individual contracts combining reverse annuity with critical health insurance as a tool for managing the pensioners' budget* (by authors Marciniuk, A. and Zmyslona, B.) was devoted to possibilities of how to interconnect two variants of contracts, marriage and individual. The results of the analysis suggested that the choice of the contract version affects the amount of financial flows related to the reverse annuity and the health insurance benefit, depending on the material needs, health condition, and age of the spouses. Financial benefits of the two variants of the contract are different.

In the section of *Application of statistical methods in economics*, Jakub Kalenský dealt with issues of real estate prices in various regions of the Czech Republic. In his paper called *Analysis of developments in prices of real estate and construction of predictive models of selected regions of the Czech Republic* he presented the results of the analysis of the development of housing prices for selected regions of the Czech Republic, the design and application of a predictive regional regression model and time series models period of 2000 to 2018. The presented results can be used for the development of management research in the field of banking institutions and for top managers in firms.

This year, a usual section called *Application and history of statistics* brought a topic related to the region, in which the conference takes place. A paper called *Reginald Kneifl and the beginnings of the statistical description of "Austrian" Silesia* (by authors Závodský, P. and Šimpach, O.) commemorated an important person, Reginald Kneifl (1761–1826). In the years 1804–1806, Kneifl published a four-volume work (a total of 1 137 pages) "*Topographie des k. K. An-theils von Schlesien*," in which he described the part of Silesia left after the Austrian-Prussian wars.

A full programme of the AMSE in 2021, including abstracts of all presented papers (from which also a brief description of the contents and aims of all the aforementioned papers follows) can be found at: <http://www.amse-conference.eu>. You can also find there information about the history of the AMSE and links to preceding AMSE international conferences.

Papers presented this year at the 23rd AMSE conference will not be published in the proceedings from the conference; nevertheless, they can be offered for a review process in the following journals – Statistika: Statistics and Economy Journal, Silesian Statistical Review, and Forum Statisticum Slovacum.

The proceedings of the past five AMSE conferences (i.e. AMSE 2014, 2015, 2016, 2017, and 2018) have been successfully indexed and are available in the Web of Science database.

The tradition of alternating organisation (Slovakia – Poland – the Czech Republic) further continues and the 24th AMSE conference (to be organised by colleagues from the departments of statistics of the Prague University of Economics and Business) will take place in the Czech Republic at the turn of August and September 2022.