



**CRACOW
UNIVERSITY
OF ECONOMICS**



**Department of Statistics
Faculty of Management
Cracow University of Economics**

**Committee of Statistics and Econometrics
Polish Academy of Sciences**

**PROCEEDINGS OF THE 8TH PROFESSOR ALEKSANDER ZELIAS
INTERNATIONAL CONFERENCE ON MODELLING
AND FORECASTING OF SOCIO-ECONOMIC PHENOMENA**

**edited by
Monika Papież and Sławomir Śmiech**

**MAY 6-9, 2014
ZAKOPANE, POLAND**

Editors: Monika Papież, Sławomir Śmiech

All published papers have been reviewed by two referees before publishing

The proceedings have not been amended or proofread and editors are not responsible for the language used in papers

Publishing of the proceedings is financed by the Polish Academy of Sciences

Suggested citation:

AUTHOR, A. (2014). Title of the paper. In: Papież, M. and Śmiech, S. (eds.), Proceedings of the 8th Professor Aleksander Zelias International Conference on Modelling and Forecasting of Socio-Economic Phenomena. Cracow: Foundation of the Cracow University of Economics, pp. xx-xx. ISBN: 978-83-62511-43-3 (HTML).

© Copyright: Proceedings are licensed under Creative Commons Attribution 3.0 License

ISBN: 978-83-62511-43-3 (HTML)

978-83-62511-48-8 (CD-ROM)

Year of publishing: 2014

Number of pages: 239

Publisher:

Foundation of the Cracow University of Economics

ul. Rakowicka 27, 31-510 Cracow, Poland

Programme Committee of the Conference:

Chairman: Prof. dr hab. Józef Pocięcha (Chairman)
Department of Statistics
Cracow University of Economics
Poland

Members: Prof. dr hab. Andrzej S. Barczak
Department of Econometrics
University of Economics in Katowice
Poland

Prof. dr hab. Czesław Domański
Department of Statistical Methods
University of Łódź
Poland

Prof. dr hab. Krzysztof Jajuga
Department of Financial Investments and Risk Management
Wroclaw University of Economics
Poland

Prof. dr hab. Jacek Osiewalski
President of the Committee of Statistics and Econometrics, the Polish
Academy of Sciences
Poland

Prof. RNDr. Viera Pacakova, PhD
Institute of Mathematics and Quantitative Methods
University of Pardubice
Czech Republic

Prof. Anatoliy I. Pilyavskyy
Department of Mathematics
Lviv Academy of Commerce
Ukraine

Doc. Ing. Eva Sodomova, PhD
Department of Statistics
University of Economics in Bratislava
Slovakia

Prof. dr hab. Mirosław Szreder
Department of Statistics
University of Gdansk
Poland

Organizing Committee of the Conference:

Chairman: **Prof. dr hab. Józef Pociecha**
Department of Statistics, Cracow University of Economics
Poland

Vice-chairman: **Prof. UEK dr hab. Anna Malina**
Department of Statistics, Cracow University of Economics
Poland

Members: **Roman Huptas PhD (Scientific Secretary)**
Department of Statistics, Cracow University of Economics
Poland

Prof. UEK dr hab. Barbara Pawelek
Department of Statistics, Cracow University of Economics
Poland

Dr hab. Stanisław Wanat
Department of Statistics, Cracow University of Economics
Poland

Katarzyna Frodyma PhD
Department of Statistics, Cracow University of Economics
Poland

Artur Lipieta PhD
Department of Statistics, Cracow University of Economics
Poland

Monika Papież PhD
Department of Statistics, Cracow University of Economics
Poland

Sławomir Śmiech PhD
Department of Statistics, Cracow University of Economics
Poland

Conference website:
<http://www.konferencjajakopianska.pl>

Organizer's website:
<http://www.katstat.uek.krakow.pl/en/>

List of Referees:

Prof. dr hab. Andrzej S. Barczak

Department of Econometrics
University of Economics in Katowice
Poland

Prof. dr hab. Czesław Domański

Department of Statistical Methods
University of Łódź
Poland

Prof. dr hab. Krzysztof Jajuga

Department of Financial Investments and Risk Management
Wrocław University of Economics
Poland

Prof. RNDr. Viera Pacakova, PhD

Institute of Mathematics and Quantitative Methods
University of Pardubice
Czech Republic

Prof. Anatoliy I. Pilyavskyy

Department of Mathematics
Lviv Academy of Commerce
Ukraine

Doc. Ing. Eva Sodomova, PhD

Department of Statistics
University of Economics in Bratislava
Slovakia

Prof. dr hab. Mirosław Szreder

Department of Statistics
University of Gdansk
Poland

Dr hab. Paweł Ulman

Department of Statistics
Cracow University of Economics
Poland

Dr hab. Stanisław Wanat

Department of Statistics
Cracow University of Economics
Poland