

Slovak Statistical and Demographic Society

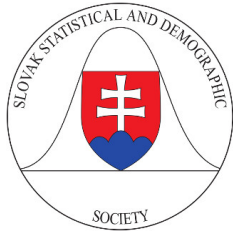
**Matej Bel University in Banská Bystrica
Faculty of Economics**

F[inance] – E[conomics] – R[egions] – N[otions]

FERNSTAT 2016

Conference Proceedings

22 Sep - 23 Sep 2016
Šachtička, Banská Bystrica
Slovakia



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FERNSTAT 2016

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The members of the Honorary committee took their part in establishing the tradition of FERNSTAT conferences and their legacy is gladly acknowledged and discernible also in the current FERNSTAT 2016 conference.

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Foreword

The collection of papers that are brought into this book is compliant well with the focus of the FERNSTAT 2016 conference. Its name is forged to represent both the multi-disciplinary and singular character of this gathering of academic community. Whereas [F] stands for "finance", [E] derives from "economics", [R] alludes to "regions" and [N] comes from "notions", the suffix [STAT] represents the component that underlies all these parts at a special point of their intersection. The conference is both applicationally and theoretically oriented and it seeks after statistical insights and connect them with issues of economics, finance and regions, attempting to provoke new ideas and spark methodological developments. It discusses contemporary issues and notions of finance, economics and regional research from a new perspective with the intention of bringing along original views and deepening knowledge in the area where finance, economics and regional research overlap with statistics.

This year of conference was sort of a revival after some pause and goes in the tradition established by Jozef Chajdiak and Ján Luha whose engagement and commitment is commemorated and fully respected. As part of this acknowledgement, the conference was organized by the Slovak Statistical and Demographic Society in collaboration with the Faculty of Economics of Matej Bel University in Banská Bystrica. This year, the conference took place at Šachtička nearby Banská Bystrica between 22 Sep 2016 and 23 Sep 2016 and the presentations of its participants are now translated into this book of proceedings.

Only the papers that were presented at the conference were permitted further to take part in the double-blind peer review process and qualified for possible later publication in the conference proceedings. In consequence, the conference proceedings assemble only those papers that passed successfully a blind peer review assisted by two independent referees. The guidelines that governed the review process and were a normative in publishing these proceedings are presented after the table of contents.

The conference proceedings comprise about a dozen of papers that are published not only in this book but made fully accessible on the conference website

<http://fernstat.ssds.sk>

in the hope that it helps better communicate their scientific contribution and disseminate their scientific attainments to a wider audience.

Gratitude goes to both the Scientific and Organizing Committee for their involvement and hard work that left its marks on this book and to a number of referees whose names are declared in the editorial information to honour their valuable assistance.

Martin Boďa

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Publication ethics and publication malpractice statement

The following statement bases on the publishing ethics guidelines maintained by Elsevier (<https://www.elsevier.com/about/company-information/policies/publishing-ethics>) and on the code of conduct by COPE (<http://publicationethics.org/resources/code-conduct>). It is compiled fully as recommended by Elsevier.

The publication of an article in the peer-reviewed proceedings from the conference FERNSTAT 2016 [Finance – Economics – Regions – Notions] is an essential building block in the development of a coherent and respected network of knowledge. It is a direct reflection of the quality of the work of the authors and the institutions that support them. Peer-reviewed articles support and embody the scientific method, and therefore the following standards of expected ethical behaviour for all parties involved in the act of publishing are adopted. The adopted standards concern the author, the proceedings editor, the peer reviewer and the publisher. The Editorial Board of FERNSTAT 2016 is committed to ensuring that advertising, reprint or other commercial revenue has no impact or influence on editorial decisions.

Duties of authors

Reporting standards Authors of reports of original research should present an accurate account of the work performed as well as an objective discussion of its significance. Underlying data should be represented accurately in the paper. A paper should contain sufficient detail and references to permit others to replicate the work. Fraudulent or knowingly inaccurate statements constitute unethical behaviour and are unacceptable. Review and professional publication articles should also be accurate and objective, and editorial ‘opinion’ works should be clearly identified as such.

Data access and retention Authors may be asked to provide the raw data in connection with a paper for editorial review, and should be prepared to provide public access to such data, if practicable, and should in any event be prepared to retain such data for a reasonable time after publication.

Originality and plagiarism The authors should ensure that they have written entirely original works, and if the authors have used the work and/or words of others, that this has been appropriately cited or quoted. Plagiarism takes many forms, from ‘passing off’ another’s paper as the author’s own paper, to copying or paraphrasing substantial parts of another’s paper (without attribution), to claiming results from research conducted by others. Plagiarism in all its forms constitutes unethical publishing behaviour and is unacceptable.

Multiple, redundant or concurrent publication An author should not in general publish manuscripts describing essentially the same research in more than one journal or primary publication. Submitting the same manuscript to more than one journal or conference proceedings concurrently constitutes unethical publishing behaviour and is unacceptable. In general, an author should not submit for consideration in another journal or for conference proceedings a previously published paper. The authors and

editors of the journals concerned must agree to the secondary publication, which must reflect the same data and interpretation of the primary document. The primary reference must be cited in the secondary publication.

Acknowledgement of sources Proper acknowledgment of the work of others must always be given. Authors should cite publications that have been influential in determining the nature of the reported work. Information obtained privately, as in conversation, correspondence, or discussion with third parties, must not be used or reported without explicit, written permission from the source. Information obtained in the course of confidential services, such as refereeing manuscripts or grant applications, must not be used without the explicit written permission of the author of the work involved in these services.

Authorship of the paper Authorship should be limited to those who have made a significant contribution to the conception, design, execution, or interpretation of the reported study. All those who have made significant contributions should be listed as co-authors. Where there are others who have participated in certain substantive aspects of the research project, they should be acknowledged or listed as contributors. The corresponding author should ensure that all appropriate co-authors and no inappropriate co-authors are included on the paper, and that all co-authors have seen and approved the final version of the paper and have agreed to its submission for publication.

Hazards and human or animal subjects If the work involves chemicals, procedures or equipment that have any unusual hazards inherent in their use, the author must clearly identify these in the manuscript. If the work involves the use of animal or human subjects, the author should ensure that the manuscript contains a statement that all procedures were performed in compliance with relevant laws and institutional guidelines and that the appropriate institutional committee(s) has approved them. Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

Disclosure and conflicts of interest All authors should disclose in their manuscript any financial or other substantive conflict of interest that might be construed to influence the results or interpretation of their manuscript. All sources of financial support for the project should be disclosed. Examples of potential conflicts of interest which should be disclosed include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Potential conflicts of interest should be disclosed at the earliest stage possible.

Fundamental errors in published works When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the editor or publisher and cooperate with the editor to retract or correct the paper. If the editor or the publisher learns from a third party that a published work contains a significant error, it is the obligation of the author to promptly retract or correct the paper or provide evidence to the editor of the correctness of the original paper.

Duties of editors

Publication decisions The proceedings editor is responsible for deciding which of the articles submitted to the conference should be published. The validation of the work in question and its importance to researchers and readers must always drive such decisions. The editor is guided by the policies of the Editorial Board of FERNSTAT 2016 and constrained by such legal requirements as shall then be in force regarding libel, copyright infringement and plagiarism. The editor may confer with other editors or reviewers (or society officers) in making this decision.

Fair play The editor evaluates manuscripts for their intellectual content without regard to race, gender, sexual orientation, religious belief, ethnic origin, citizenship, or political philosophy of the authors.

Confidentiality The editor and any editorial staff must not disclose any information about a submitted manuscript to anyone other than the corresponding author, reviewers, potential reviewers, other editorial advisers, and the publisher, as appropriate.

Disclosure and conflicts of interest Unpublished materials disclosed in a submitted manuscript must not be used in the editor's own research without the express written consent of the author. Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage. The editor should recuse oneself from considering manuscripts in which they have conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or (possibly) institutions connected to the papers. The editor should require all contributors to disclose relevant competing interests and publish corrections if competing interests are revealed after publication. If needed, other appropriate action should be taken, such as the publication of a retraction or expression of concern. Non-peer reviewed sections of the proceedings should be clearly identified.

Involvement and cooperation in investigations An editor should take reasonably responsive measures when ethical complaints have been presented concerning a submitted manuscript or published paper, in conjunction with the publisher (or society). Such measures will generally include contacting the author of the manuscript or paper and giving due consideration of the respective complaint or claims made, but may also include further communications to the relevant institutions and research bodies, and if the complaint is upheld, the publication of a correction, retraction, expression of concern, or other note, as may be relevant. Every reported act of unethical publishing behaviour must be looked into, even if it is discovered years after publication.

Duties of reviewers

Contribution to editorial decisions Peer review assists the editor in making editorial decisions and through the editorial communications with the author may also assist the author in improving the paper. Peer review is an essential component of formal scholarly communication, and lies at the heart of the scientific method. The Editorial Board of FERNSTAT 2016 shares the view of many that all scholars who wish to contribute to publications have an obligation to do a fair share of reviewing.

Promptness Any selected referee who feels unqualified to review the research reported in a manuscript or knows that its prompt review will be impossible should notify the editor and excuse himself from the review process.

Confidentiality Any manuscripts received for review must be treated as confidential documents. They must not be shown to or discussed with others except as authorized by the editor.

Standards of objectivity Reviews should be conducted objectively. Personal criticism of the author is inappropriate. Referees should express their views clearly with supporting arguments.

Acknowledgement of sources Reviewers should identify relevant published work that has not been cited by the authors. Any statement that an observation, derivation, or argument had been previously reported should be accompanied by the relevant citation. A reviewer should also call to the editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published paper of which they have personal knowledge.

Disclosure and conflict of interest Unpublished materials disclosed in a submitted manuscript must not be used in a reviewer's own research without the express written consent of the author. Privileged information or ideas obtained through peer review must be kept confidential and not used for personal advantage. Reviewers should not consider manuscripts in which they have conflicts of interest resulting from competitive, collaborative, or other relationships or connections with any of the authors, companies, or institutions connected to the papers.

Papers