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prof. RNDr. Ing. František Peller, PhD. – vedúci, Katedra matematiky, Fakulta hospodárskej informatiky Ekonomickej univerzity v Bratislave

doc. Ing. Eva Sodomová, PhD. – vedúca, Katedra štatistiky, Fakulta hospodárskej informatiky Ekonomickej univerzity v Bratislave

prof. Ing. Anna Šlosárová, PhD. – vedúca, Katedra účtovníctva, Fakulta hospodárskej informatiky Ekonomickej univerzity v Bratislave

RECENZENTI:

Anna Baštincová, Ivan Brezina, Petr Cenek, Michal Fendek, Marián Goga, Eduard Hozlár, Mária Hromníková, Jaroslav Husár, Janka Hvoždárová, Jaroslav Janáček, Miloslav Janhuba, Ladislav Kareš, Mojmír Kokles, Antónia Kovalčíková, Lenka Krupová, Anna Kvietková, Ludmila Lipková, Adriana Lukáčiková, Katarína Máziková, Elena Mojžišová, Viera Pacáková, Ružena Pardelová, František Peller, Jiří Polách, Eva Rublíková, Johannes Ruhland, Stojan Russev, Eva Sodomová, Anna Šlosárová, Milan Terek, Miloš Tumpach, Peter Závodný.

Zostavenie zborníka: doc. Ing. Ružena Pardelová, PhD.

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Fakulta hospodárskej informatiky EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

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1. sekcia

1st Section

**Informačné technológie a informačné systémy –
podpora informačnej spoločnosti**

**Informatics technologies and informatics systems –
maintenance of informatics society**

Štátna pokladnica. Súčasť informačného systému verejnej správy

The State Treasury presents a new system in a complex financial management of public finances and in cash management, debt management and management of investment of public finances' short-term surplus liquidity. It also ensures revenue centralization and public budgets execution, administration of state budget's accounts receivable and payable, and daily liquidity of the state budget. The State Treasury does not interfere with the operation of public administration neither with its competencies

Ing. Igor Bandurič, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Predpoklady vývoja vedomostnej ekonomiky na Slovensku

The economy is less and less dependent material and the added value has more and more nonmaterial form.

The nonmaterial factors in production actually represent about 50% share in the economic process, the intellectual property become determining and technological know-how is more important factor than the ability to produce something.

The leading role, in the future of Slovakia, will have the services and intellectual work. This is closely related to the knowledge of informatics, computers and digital technologies. Slovakian natural resources have been exhausted. The only source, which can bring a competitive advantage is the „grey cerebral cortex“. For these reasons the Slovak Government has to seek the competence of the population to handle these technologies via different supporting and assistance programs, the support from European Union side (Minerva program and Lisbon Strategy).

The development of knowledge technology in Slovakia can be backed on good business environment, which results from the economic reforms. The main target of Slovakian Government is to reach the allocation of 3% GDP to finance the science, research and development.

Ing. Majid Belmiloud, Fakulta medzinárodných vzťahov EU v Bratislave, Ul. A. Bernoláka 5, 034 01 Ružomberok

Vývojové prostredia na návrh informačných systémov vyučovaných na univerzitách v Slovenskej republike

In modern society is the life without automated information systems unthinkable. Development environments are used for design and development of information systems. The paper tells about four most popular environments for design information systems which are the result of the analysis of development environments for design of information systems taught at universities in the Slovak republic. The most preferred taught environments are Rational XDE, Rose or Architect, Microsoft Visio and Oracle9i Designer and Developer. The paper describes their functionality and area of use.

Ing. Martin Blahušiak, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Globalizácia vývoja ERP aplikácií pre segment malých a stredných podnikov – vybrané aspekty

Enterprise resource planning (ERP) applications have become an integral part of companies' information systems landscape and are being implemented not only in large companies, but also in small and medium businesses (SMB) leveraging their operational effectiveness and resource utilization. Development of such ERP applications for a global market in the SMB market segment, requiring globalization, involves paying attention to many previously unseen aspects, as within the product definition, analysis, or technical implementation. This article tries to summarize the most important challenges ERP application for SMB development with globalization is facing.

Ing. Andrej Danko, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Informačná bezpečnosť - nové výzvy a riešenia

As to the security environment, its development at the beginning of the 21st century can be characterized as the end of the confrontation between two military blocks with decreased probability of a global conflict and the continuing integration of Central and Eastern European countries into North Atlantic Alliance and the EU. World's regions as a consequence of limited ability of certain countries to deal with the challenges and make use of the opportunities brought by the information era, new technologies, extensive exploitation of the outer space and revolutions in the military area.

Ing. Július Hlaváč, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Nové trendy v oblasti systémovej integrácie

System integration or enterprise application integration (EAI) is currently one of the fastest growing segment in IT sector. Companies which already have experiences with business to business (B2B) integration or internal application integration understand to the benefits which integration brought to them. They also understand that just simple automation of their communication with partners and its own business processes is not the final, but the first step. The main focus in this area is currently on the monitoring and the optimization of already setup processes to achieve its higher efficiency. These new approaches are going far beyond the classic understanding of B2B or EAI and to its implementation require the most recent technologies as Business Intelligence or SOA.

Ing. Peter Horňák, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dohnányho 6, 821 08 Bratislava

Podpora hospodárskeho rozvoja regiónov prostredníctvom rozvíjania spoločnosti založenej na vedomostiach

Information and communications technology (ICT) has brought both new opportunities and challenges for businesses and represents a new factor of regional competitiveness. For regions, ICT has increased the pace of change with potentially profound effects on living and working conditions and on the territorial distribution of economic activity. The ICT sector is a major contributor to the economy, while the adoption and skilful application of ICT is one of the largest contributors to productivity and growth throughout the economy, leading to business innovation in key sectors.

Ing. Katarína Krištofová, Slovenská národná knižnica, Námestie J. C. Hronského 1, 036 01 Martin

Hodnotenie a IKT

This paper is specialized to the analysis of quality control educate and of application information and communication to technology on improvement of quality of formation. In first part put on the stage analysis some defections of the valuations of the students'. In second part is some tendency elimination this defection. The third element is translation focus application possible operative information system budget for automatic examination of students'.

Ing. Jaroslav Kultán, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Zvýšenie penetrácie internetu v SR spolu so zvýšením bezpečného internetu pre deti a mládež

Internet is a system architecture that has revolutionized communications and methods of commerce by allowing various computer networks around the world to interconnect. Today millions of people of the world use internet every day as a toll in working places, various offices, at schools and also at home. It is necessary to increase of penetration of internet also in our country, in Slovak Republic as a new member of European Union.. It is very important role for increase of digital literacy and for education and finding a lot of new information and for using various on-line services. New projects start in the year 2006 with the aim of financial support of penetration of internet perhaps for education of young people in Slovakia. Also it is necessary to realize a risk of harmful and illegal content of internet first off all for children and young people. It is very serious problem for the whole world and also for the members of European Union and our country. Many activities aim at safer internet.

Ing. Anna Ondrejková, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Znalostné systémy vo vzdelávaní

Nowadays, it is very asked to build information systems based on quick and corresponding reactions to the user. Object oriented approach brings big advantages to development of information systems. On the other side there are some problems to solve when using it in building some specific systems. Very positive way of solutions seems taking attention on defined areas and using more tools than those offered in approach, methodology or modeling language. In this article, these areas are described and possible solutions are mentioned.

RNDr. Eva Rakovská, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Problémy návrhu internetových aplikácií

Internet became one of the most powerful information sources of our times. Along with the numbers of new users the technology provides more speed and allows more difficult application functionality. From static http web pages, technology moved to fully dynamic object oriented and database based web applications and portals. During the last two years OO programming enter the mainstream of web development. Anyway object oriented programming for the web is not the same as OO programming for windows. Developers face different situations and solve problems that were not so often in the world of classic application. In additions there is no widely accepted methodology, which handles web based problems and brings guidelines for fast and effective development of internet applications.

Ing. Roman Russev, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, Bratislava 852 35

E-learning na Fakulte hospodárskej informatiky

E-learning is a potential way how to develop modern learning. It is also a special support for teaching. E-learning means electronic learning, i. e. learning supported by internet, web camera, chat, documents on the internet. We have also some courses at our Faculty taught via e-learning. Most of e-learning courses are prepared in Moodle, some of them in Eden and some in Claroline. We can find a lot of advantages of e-learning predominantly in distance learning. E-learning is still in developing process and is becoming more popular.

Ing. Hana Trochanová, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

2. sekcia

2nd Section

**Integrácia účtovného systému SR v podmienkach
Európskej únie**

**Integration of accounting system of Slovakia in
European union conditions**

Podstata a význam teórie účtov v teórii a praxi účtovníctva

Account is fundamental methodical instrument in accounting where we write all accounting records. Theories of accounts have their meaning not only for theory of accounting in order to emphasize developmental aspect, but principally for praxis and process of teaching. In praxis systems of account's classification are created based on practical needs of account's classifications of accounting entity's requirements for planning, financing, control in connection with accounting function (informative, documentary, controlling and determination). In education process, specific criteria in account's classification (primarily related to classification of accounting transactions and explaining double-entry accounting records) is necessary to use with methodical and didactical aspects of teaching (depending on student level or education level). Theory of accounts is connected with all areas of accounting theory.

Ing. Mgr. Renáta Feketeová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Specifika účtovníctva výkazníctví sportovních klubů

Sports franchise financial reporting is characteristic by relevant differences in the accounting policies for major specifics such as player contracts, deferred compensation, contingencies and in accounting for the acquisition of the sports franchise. Player contracts include signing bonuses and deferred compensation arrangements. The most important source of revenue include for most sports franchises, ticket revenues and broadcasting rights. Many teams also have profitable lease arrangements from which the team receives payments in form of parking and concessions fees, and stadium naming rights. Advance sales of upcoming season tickets are typically reflected as deferred revenue on the balance sheet.

Ing. Jaroslav Filinger, Katedra finančního účetnictví VŠE, nám. Winstona Churchilla 4, 130 67 Praha 3

Účtovné výkazy ako súčasť účtovnej závierky v podvojnóm účtovníctve – porovnanie slovenskej právnej úpravy s úpravou podľa IAS/IFRS.

At the present time there is much more talking about the theme concerning on compiling a financial statement according to International Accounting Standards (IAS/IFRS), due to this standards the majority of accounting entities will be prepare its financial statements since the year 2006. It means that International Financial Reporting Standards will not be refer to consolidate financial statements only, as it was till now, but also it will refer to individual financial statements some of companies. The article analyzes main common and different characters of financial reports in double-entry bookkeeping, compile according to national legislation and according to IAS/IFRS.

Ing. Monika Gogová, Katedra aplikovanej informatiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Projekt tvorby výkazu identifikovaných výnosov a nákladov

The Comprehensive income is represented by combination of profit or loss as presented in the income statement and income and expense as presented in the form of changes in equity other than those arising from transactions with equity holders. To describe comprehensive income, the IAS 1 uses the term „recognised income and expense” which also refers to financial performance of an entity.

In order to improve the usefulness of information in assessing the financial performance of an entity, the IASB develops the standard for presentation of this information. The project is called “Performance reporting” and it is conducted as joint project of IASB and FASB. This report focuses on description of development of this standard. In its three parts, it defines comprehensive income and points out its importance, approaches the current techniques in presentation of comprehensive income and describes creation of standard before and after the joint IASB and FASB working group was formed.

Ing. Michal Hrapko, University College London

Kvalitatívne charakteristiky informácií – činiteľ ovplyvňujúci vzťah medzi účtovnou závierkou a jej používateľmi

The purpose of this paper is to examine characteristics that make accounting information useful. Those who prepare, audit, and use financial reports, as well as the International Accounting Standards Board or The United States standard-setter, the Financial Accounting Standards Board, must often select or evaluate accounting alternatives. The characteristics of information that make it a desirable commodity can be viewed as a hierarchy of qualities, with usefulness for decision making of most importance. Without usefulness, there would be no benefits from information to set against its cost. Usefulness is the most important characteristic of any reported information. To be useful, financial information must be understandable, relevant, comparable, reliable, verifiable and complete in order to be reliable, must be provided in time to make decision and financial information cannot favour one group over another group.

Ing. Martina Hurtoňová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Medzinárodné účtovné štandardy pre verejný sektor (IPSAS) ako základ medzinárodnej harmonizácie účtovníctva vo verejnom sektore

The process of international harmonization in all spheres is becoming topical worldwide in connection with the accession of the Slovak Republic to the European Union. This intensive process of international harmonization also includes a lot of important changes in the public sector including the public sector accounting. The public sector accounting is the specific scope of international harmonization and it is necessary to deal with this matter. The article deals with the process of international harmonization in the public sector accounting and the characteristic of the International Public Sector Accounting Standards (IPSASs) that are issued by the International Public Sector Accounting Standards Board formerly Public Sector Committee.

Dlhodobý hmotný majetok – účtovné zobrazenie a prezentácia podľa US GAAP

Fixed assets represent one of the widest areas of accounting consideration. In US GAAP there does not exist any complex standard covering whole area of fixed assets and this topic is split in many partial standards. The amount at which the assets are recorded, the rate and pattern of allocation of that amount to future periods and the recording of subsequent disposal of assets represent basic issues in accounting of fixed assets. In comparing to Slovak statutory accounting there are some sources of differences which mainly consist of considerations of interest cost capitalization, asset retirement obligation, non monetary transactions, impairment and disclosure.

Ing. Juraj Kulik, Katedra účtovníctva, FHI EU v Bratislave, Silvánová 12, 902 01 Pezinok

Zmeny v účtovaní vo vlastnom imaní od 1.1.2006

Legislative changes have brought modification in equity accounting since January 1st, 2006. Equity is a general name for property backing of own capital.

The changes have become evident especially in accounting procedures on the account 413 - Other capital funds where it came to an essential reduction in content accounting on this account.

Therefore, with the help of specific examples we will try to include in this report actual accounting changes on the account 413 - Other capital funds with regard to the status before the change and after it since January 1st, 2006.

The conclusion will be dedicated to evaluation if established changes were reasonable and what is their incidence on accountancy.

Ing. Martina Mateášová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Dlhodobý nehmotný majetok v účtovníctve podnikateľov SR a IFRS

Since the moment the intangible assets has become an object of trade on the national and international market and in the scope of crated international structures, its definition, identification, evaluation and presentation must be ruled by national and international legislation and their harmonization. The Slovak legislation implements step by step many attributes of international accounting standards, that leads to decreasing of existing distinctions. There is an effort to create the frame of financial reporting in order to assure that presented information were comparable and understandable. In despite of changes in the accounting legislation in the Slovak Republic, many compatible regulation in the sphere of intangible assets are identified, there still exist distinctions in comparison with IFRS. The distinctions result mainly form connection of Accounting Act with other particular legislation.

Ing. Daša Mokošová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Zostavovanie účtovnej závierky podľa IAS/IFRS

Intergation of the Slovak Republic to the European Union started the process of accounting harmonisation in Slovakia. In 2002 Slovak republic adopted new Act no 431/2002 Coll. on accounting. This act sets basis for gradual application of requirements defined in directives of European Parliament and Council of the European Union. Act no. 431/2002 Coll. on accounting was amended by Act no. 561/2004 Coll. For the first time, sections 22, 17a and 17b of this amendment specified which entities have to prepare consolidated and individual financial statement according to IAS/IFRS. But on the other hand this amendment does not state the exact method of bookkeeping and financial reporting. Submitted work solves three different ways of bookkeeping and financial reporting. Appropriate way is chosen by entity itself, according to its abilities, aspect of time span, capital, knowledge and experiences with bookkeeping and financial reporting according to IAS/IFRS.

Ing. Lucia Ondrušová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Povinnosť zostavovať konsolidovanú účtovnú závierku podľa 7. smernice EÚ a IAS/IFRS

Obligation to draw up consolidated accounts according to 7th Council Directive and IFRS
Consolidated accounts held two main aspects:

- requirements to draw up consolidated accounts,
- consolidation procedures and methods.

Since 1st January 2005 accounting legislation of the Slovak Republic implements IFRS in consolidation procedures and methods but the obligation to draw up consolidated accounts (identification of group of entities) is specified differently, in accordance with Seventh Council Directive.

The aim of this paper is to summarize and compare obligations to draw up consolidated accounts according to Seventh Council Directive and IFRS.

Ing. Branislav Parajka, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Testovanie zníženia hodnoty goodwillu

According to IFRS 3 *Business combinations* goodwill acquired in a business combination is not amortised. Instead amortisation of goodwill the acquirer carries out the test for impairment annually, or more frequently if events or changes of circumstances indicate that the goodwill might be impaired. The paper deals with presentation of the process of testing of goodwill for impairment, in accordance with IAS 36 *Impairment of Assets*.

Ing. Renáta Parišová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Oceňovanie v mimoriadnych účtovných závierkach so zameraním na účtovné jednotky vzniknuté splnutím

The aim of this contribution is inform about problems of the valuation in so specific events as is compile special financial statements in case of extinction one or more companies, when new company is arised by merging.

Ing. Renáta Silná, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Zdaňovanie zisku a dividend v krajinách Európskej únie

The aim of this contribution is to compare profit taxation in member states of the European Union and to compare various models of subsequent taxation of the profit paid to shareholders in the form of dividends. The contribution draws comparison of effective taxation and nominal tax rates and also points out the differences between the old and the new member states of the European Union.

Ing. Ján Solík, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

Prezentácia majetku v účtovnej závierke podľa IAS/IFRS

According to IAS/IFRS assets are defined as probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events. The asset must provide probable future economic benefit and must be capable of being measured reliably. The paper deals with identification of assets presented in the financial statements, their classification and evaluation.

Ing. Miriama Šulovská, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Finančný prenájom v účtovníctve podnikateľov SR a IFRS

Finance leasing is long-term lease relation based on separate law and economic ownership of lease object. The main aim is finance all or significant part of acquisition costs during duration lease and economics use of lease object in parallel action. Finance leasing is regulated on international area by IAS 17 – Lease. In condition of Slovak republic is in force new legislation adjust finance leasing since 2003. Changes in slovak legislation were necessary within harmonization our condition in accounting and tax because of Slovak republic accession to European union. Leasing is dynamic area of business and several revisions of accounting and tax law were necessary since 2004.

Ing. Miroslava Vašeková, , Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Stavební smlouvy – srovnání úpravy v ČR s IFRS

Annual reports of enterprises supplying complete units provide useful informations only when construction contract are sufficiently regulated. Under IAS/IFRS it is regulated with IAS 11, but in the Czech Republic there are no special rules for construction contracts. The main difference between regulations is recognising of contract revenues and measurement of work in progress. Under IFRS revenues are recognized by using percentage of completion method, that is independent of invoicing. Estimated profit is recognized during all years when the contract is fulfilled. In the Czech Republic contract revenues are recognized in connection with an invoice. Meanwhile only costs of contract are capitalized and no profit is presented. Enterprises have also more opportunities for creative accounting.

Ing. Pavel Vondráček , VŠE Praha, Fakulta financí a účetnictví

Účtovné a daňové aspekty vykazovania pohľadávok

The paper deals with problems of the receivables from the accounting and tax view. The accounting aspect expresses measurement, evidence and presentation of receivables in relation to particular accounting principles. The tax view expresses influence of the risk from receivables after maturity date by the calculation of tax base and later to tax liability of the entity.

Ing. Erika Žilkayová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1,852 35 Bratislava

3. sekcia

3rd Section

**Aplikácia štatistických a aktuárskych vied
v sociálno-ekonomickom priestore**

**Application of statistical and actuarial sciences in
social-economic space**

Výberové skúmanie s asistenciou modelu

In the opening this conference paper describes the main roles of sample survey and its specific ways of use in practice. A substantial part of this paper is devoted to the each individual approach to sample survey, especially the model assisted approach. In this approach the values of the variables in the finite population are assumed realizations from a superpopulation model. Superpopulation model will be used as a tool for giving compact descriptions of useful a priori knowledge about relations between the study variables and available auxiliary variables and as guide in the search for efficient strategies. Inference will not depend on the model, but the model will assist it in the sense that the better the superpopulation model depicts the finite population, the better we can hope to succeed in our task of estimating the finite population parameters.

Ing. Marek Balog, *Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava*

Modelovanie nestacionárnych procesov

This paper deals with modeling nonstationary processes. Stationary implying, that the mean, variance and autocovariances of the process are invariant under time translations. Many economic time series, however, are certainly not stationary and, in particular, have a tendency to exhibit time-changing levels and/or variances. Eliminating nonstationarity is provided by some transformations, which are shown in this contribution.

Ing. Jaroslav Brzák, *Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava*

Aplikácia jednej z metód viacrozmerného porovnávania na údaje za kraje SR za roky 1997 - 2003

Multivariate methods are used for comparison of particular regions or countries. In this paper we present methods of weight definitio of intensity indicators and application of pointed method to data of particular regions of Slovak republic for years 1993 – 2004. Basic goal is and ordination of regions based on data of choosed intensity indicators – *gross added value per capita, labour efficiency, capital efficiency, capital – employee ratio, total labour costs per employee, employee efficiency, employees – employed ratio, employment rate, economic activity rate and labour potention – population ratio.*

Ing. Lubica Hurbánková, *Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava*

Konvolúcie triedy sčítacích rozdelení

In this paper we examine the counting distributions whose discrete density satisfies the recursion (1). We use the moment generating function that was derived in [2]. Then we examine the convolutions of two and more distributions from diferent classes \mathfrak{R}_k . We apply

the results to the convolutions of distributions from the class \mathcal{R}_1 (binomial, Poisson, negative binomial, geometric).

Ing. Dušan Hut'ka, Katedra matematiky, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Intervalové odhady v bayesovskej štatistike

Bayesian statistics is an alternative approach whereby statisticians can solve the problems of statistical inference. It allows them to use not only the information coming from the random sample, but any other evidence about watched features, that are available before sampling. By justifiable combination of two kinds of information one can get more accurately consequence, then it is possible by using classical methods.

In this paper we deal with confidence intervals of the pool (election will be performed in Slovak republic in June 2006). We will compare the results, that come from using the different approaches: classical and bayesian. The second of them leads to narrower intervals, so it is a good reasoning in favour of using bayesian methods.

RNDr. Eva Kotlebová, Katedra štatistiky, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Analýza vybavenosti domácností SR predmetmi dlhodobej spotreby.

In the paper there are presented reduced results of statistical analyses of household equipment of long-term consumption in Slovakia. These results show certainly interesting general view on the data obtained from the census, realized in May of 2001. The aim of this work was the demonstration of application possibilities of statistical methods to parse the data obtained from the census and to make them well arranged, since they are published in table format and so they do not show a global view on the general state. The large width of analyses was the main reason of using the electronic media to present all of the results. Account on this a web page for general public, which contains all analyses and results, was created (<http://www.fhi.sk/sk/katedry/ks/veda-a-vyskum>).

Ing. Miroslav Králik, Katedra štatistiky, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Využitie metódy Monte Carlo pri analýze portfólia poisťných zmlúv

The Monte Carlo methods provides approximate solutions to a variety of mathematical problems by performing statistical sampling experiments on computer. This article compares the "Hits" or "Miss" Monte Carlo method by specifying the distribution of the total loss in the concrete portfolio of insurance policies. It discusses the degree of accuracy of the simulated solution and it points to possible usages in insurance practice.

Mgr. Vladimír Mucha, Katedra matematiky, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Non-linear time series models

This paper develops a family of models of generalized autoregressive conditional heteroscedasticity (GARCH) that encompasses all popular existing GARCH models. The nested models include Bollerslev's (1986) GARCH model, Nelson's (1991) exponential GARCH (EGARCH) model, and Zakoian's (1991) threshold GARCH (TGARCH) model, as well as others.

Detailed discussion follows for some of the most popular models.

Ing. Iveta Príhodová, Katedra štatistiky FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Aplikácia niektorých Panjerových rekurentných vzťahov v teórii rizika

Compound distributions are used in the risk theory to model the distribution of total claims. Usually the computation of many convolutions is effectuated. This process becomes difficult with increasing number of claims.

In this paper, Panjer recursive formulas application is shown to model the distribution of the number of claims as well as to model the distribution of total claims in non-life insurance product.

Ing. Ladislav Šváb, netPoint, s.r.o., Martinská 49, 821 05 Bratislava

4. sekcia

4th Section

**Aplikácia modelov a metód operačného výskumu
a ekonometrie v ekonomickom rozhodovaní**

**Application of operation research and econometric
models and methods in economic decision making**

Parametrické a neparametrické metódy odhadu efektívnosti podnikov sieťových odvetví

This paper studies the problem of benchmarking methods used in the regulation practice of network industries. Most of regulation schemes are based on benchmarking, that is, measuring a company's cost efficiency against a reference performance. Three commonly used parametric (SFA, COLS) and nonparametric (DEA) approaches have been examined. In SFA (Stochastic Frontier Analysis) model, inefficiency is represented by an asymmetric term of residuals and a symmetric component covers statistical noise. On the other hand using COLS (Corrected Ordinary Least Squares) method, a firm inefficiency is defined as entire stochastic term.

Ing. Andrea Furková, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Improving the maintenance of pipeline networks with decision support systems

Maintenance of distribution networks is among the most important tasks a public utility company faces. A lot of decisions in this field depend on the state of the network but also on the spatial environment of a pipe. Data about pipes and their location are often stored in Geographic Information Systems. The usage of this spatial and non-spatial information together with expert knowledge in a decision support system in order to manage construction sides for maintenance would result in large cost savings.

Dipl.-Inf. Kathrin Kirchner, Friedrich-Schiller-University of Jena, Faculty of Business and Economics, Department of Information Systems, Carl-Zeiss-Strasse 3, 07743 Jena, Germany

Metódy matematického programovania pri riešení úlohy rozmiestnenia vlakových staníc

A cargo railway system is a transportation system, which has approximately the same number of primary sources as number of customers. Flows of carriages from primary sources to customers are concentrated in terminals (marshaling yards) to create a bigger flow between them. This model is called „many-to many“ distribution system, belongs to discrete quadratic programmes and the optimal solution can't be founded because of time purposes. For estimating the optimal value can be used the lower bound solution of the model. Estimation of optimal value can be used for comparison of „quality“ of solutions obtained by approximate and heuristics methods.

Ing. Michal Koháni, Katedra dopravných sietí, Fakulta riadenia a informatiky, Žilinská univerzita, Univerzitná 8215/1, 010 26 Žilina

Optimalizácia riadenia prekládkových terminálov

Crossdocking terminals are transshipment facilities without stock, for a rapid consolidation and shipment of products. The difference to traditional distribution centers is the complete elimination of all storage functions. In consequence of this elimination the incoming and outgoing shipments have to be exactly coordinated to achieve a transshipment operation at

minimum cost. This article offers short overview about crossdocking terminals and problems to be solved and also applications where the idea of the crossdocking can be used.

Ing. Peter Lošonský, Katedra dopravných sietí Fakulty riadenia a informatiky, Žilinská univerzita, Univerzitná 8215/1 Žilina 01026

Macroeconomic Flows in Open Economy

In this paper we analyse macroeconomic flows in open economy. We are developing Social Accounting Matrix from the simplest form to more komplex form. We also describe some macroeconomic relations presented in SAM.

Ing. Michal Macák, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Ekonomická interpretácia teórie optimálneho riadenia

In this paper we try to explain some basic ideas of Optimal control theory. We tried to write this paper in two parallel points of view. The first way is the mathematic basement for solving optimal control theory and we explain the necessary conditions for this problem and we also show why in this problems is better to maximize the Hamiltonian function than the maximize the objective function. The second view is the economic interpretation of optimal control theory on easy example.

Ing. Nora Mikušová, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Úlohy s kontajnermi ako úlohy celočíselného programovania

This paper deals with two kinds of container problems: empty container problem as an enlarged pack problem and container transportation problem. The aim of this article is to deduce mathematical formulation for empty container problem with two types of containers and then with T types of containers.

Ing. Veronika Nahácka, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Model so zdanlivo nesúvisiacimi náhodnými poruchami

The paper is about the seemingly unrelated regression (SUR), which is a technique for analyzing a model with multiple equations and correlated error terms. SUR is a class of multivariate regression (multiple regression) models, normally belonging to the sub-class of linear regression models. A distinctive feature of SUR models is that they consist of several unrelated systems of equations. Paper also introduce the SUR model on one Slovak example case.

Oceňovanie input – output tabuľky

Leontief's input-output models have wide use in the practice especially in analyzing the effects of different changes. One of them is price change of components of value added in the sectors with effect of production price change in other sectors. Or eventually it can be autonomous production price change in given sector without changing production prices in other sectors because of, for example, market situation. Therefore components of value added have to be changed. Utilization of input-output tables has its justification mainly in more important regionalization of countries. Because European Union can be understood as the system of regions, of member states.

Ing. Slávka Pavlovičová

The effectiveness of outsourcing in the army of Czech republic

The aim of the article is to provide an analysis of opportunities of applications of outsourcing in the Army of Czech Republic (ACR). The base hypothesis for the evaluation of the effects of outsourcing in ACR is the acceptance of the army organization unit as a specific manufacturing concern. The effectiveness could be in that case measured with the help of the return ratio that represents the ratio of the resources for the operations required for the function of the essential function of the army unit and the costs. The effectiveness of the outsourcing could be therefore measured by the value of this ratio in two alternatives: before and after the application of the outsourcing. The difference of these two values is contemporaneously the relative rate of the outsourcing effectiveness. In the theoretical base is it a problem of more-test decision.

Mgr. Nataša Pomazalová, Ústav humanitních věd, Mendelova zemědělská a lesnická univerzita v Brně, Zemědělská 1, 613 00 Brno, Česká republika

Mutual Fund Pricing: Stale Prices and “Cash Drag”

This paper is focused on some known but often overlooked aspects of mutual fund pricing and performance measurement, namely on distortions caused by stale prices and T+1 accounting, as well as the effect of “cash drag”. In the first part a simple model of virtual mutual fund shows that there are many various pricing problems that create inconsistency between the published value of the fund unit or net asset value (NAV) and the real value of underlying assets (benchmark). The discrepancies examined within this model result from using stale prices and quantities for NAV estimates and they also depend on the frequency of pricing. The second part of the paper deals with the phenomenon called “cash drag”, which refers to difference between the performance of mutual fund and its benchmark due to non-zero cash holdings.

*Mgr. Vladimír Ravinger, ČSOB Asset Management, správ. spol., a.s., Kolárska 6
815 63 Bratislava*

Parametrizácia vektorovej funkcie viackriteriálneho programovania

This article is a contribution to the methodical and application development of multi-criteria programming (MCP) of decision-making processes. It is motivated by the building enterprising sensitivity, and research necessity in the mathematical modeling of strategic decisions of the building enterprise. It analyses conditions of the anticipated production program creation and proposes the mathematical solution of multi-criteria decision-making process, which parameterizes business goals of building company. The production program stability and the economic effects of enterprising sensitivity are tested by parameter programming of the admissible changes scope of criteria indexes. Multi-criteria parametric optimization of production program answers on discontinuity of building market and on instability of building enterprising goals.

*Ing. Alexandra Šipošová, Slovenská technická univerzita v Bratislave, Stavebná fakulta
Katedra matematiky a deskriptívnej geometrie, Radlinského 11, 813 68 Bratislava*
*Ing. Lucia Vavříková, Slovenská technická univerzita v Bratislave, Stavebná fakulta
Katedra matematiky a deskriptívnej geometrie, Radlinského 11, 813 68 Bratislava*

Leontievovské dynamické modely

The economic and production processes are essentially dynamic and their modeling cannot be limited only to static equilibrium models. Economics should be considered as a dynamic system. The models of Leontiev's type go out of the input – output table and come under macroeconomic equilibrium models. This paper deals with models of Leontiev's type created on differential equations and investigation of the stability of the dynamic system.

*Ing. Viera Zemanová, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave,
Dolnozemska cesta 1, 852 35 Bratislava*

Modely hodnotenia efektívnosti organizácií

A great variety of applications of DEA (Data Envelopment Analysis) are used in evaluating the performances of many different kinds of organizations. Examples include evaluating the efficiency of bank branches or universities in performing their education. This paper deals with evaluating the efficiency of several slovak banks.

*Ing. Marián Žabka, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave,
Dolnozemska cesta 1, 852 35 Bratislava*

Abecedný zoznam účastníkov

Alphabetical list of participants

Marek BALOG, KŠ FHI EU v Bratislave, Slovenská republika
Igor BANDURIČ, KAI FHI EU v Bratislave, Slovenská republika
Majid BELMILOUD, FMV EU v Bratislave, Slovenská republika
Martin BLAHUŠIAK, KAI FHI EU v Bratislave, Slovenská republika
Jaroslav BRZÁK, KŠ FHI EU v Bratislave, Slovenská republika
Andrej DANKO, KAI FHI EU v Bratislave, Slovenská republika
Renáta FEKETEOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Jaroslav FILINGER, KFÚ VŠE Praha, Česká republika
Andrea FURKOVÁ, KOVE FHI EU v Bratislave, Slovenská republika
Monika GOGO VÁ, KÚ FHI EU v Bratislave, Slovenská republika
Július HLA VÁČ, KAI FHI EU v Bratislave, Slovenská republika
Peter HORŇÁK, KAI FHI EU v Bratislave, Slovenská republika
Michal HRAPKO, University College London, Great Britain
Ľubica HURBÁNKOVÁ, KŠ FHI EU v Bratislave, Slovenská republika
Martina HURTOŇOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Dušan HUŤKA, KM FHI EU v Bratislave, Slovenská republika
Marianna KICO VÁ, KÚ FHI EU v Bratislave, Slovenská republika
Kathrin KIRCHNER, Faculty of Business and Economics, Jena, Germany
Michal KOHÁNI, FRI ŽU, Žilina, Slovenská republika
Eva KOTLEBOVÁ, KŠ FHI EU v Bratislave, Slovenská republika
Miroslav KRÁLIK, KŠ FHI EU v Bratislave, Slovenská republika
Katarína KRIŠTOFOVÁ, Slovenská národná knižnica, Martin, Slovenská republika
Juraj KULÍK, KÚ FHI EU v Bratislave, Slovenská republika
Jaroslav KULTAN, KAI FHI EU v Bratislave, Slovenská republika
Peter LOŠONSKÝ, FRI ŽU, Žilina, Slovenská republika
Michal MACÁK, KOVE FHI EU v Bratislave, Slovenská republika
Martina MATEÁŠOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Nora MIKUŠOVÁ, KOVE FHI EU v Bratislave, Slovenská republika
Daša MOKOŠOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Vladimír MUCHA, KM FHI EU v Bratislave, Slovenská republika
Veronika NAHÁCKA, KOVE FHI EU v Bratislave, Slovenská republika
Anna ONDREJKOVÁ, KAI FHI EU v Bratislave, Slovenská republika
Lucia ONDRUŠOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Anna ORŠULO VÁ, KOVE FHI EU v Bratislave, Slovenská republika
Branislav PARAJKA, KÚ FHI EU v Bratislave, Slovenská republika
Renáta PARIŠOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Slávka PAVLOVIČOVÁ, KOVE FHI EU v Bratislave, Slovenská republika
Nataša POMAZALOVÁ, Ústav humanitných vied, Mendelova zemědělská a lesnická
univerzita v Brně, Česká republika
Iveta PRÍHODOVÁ, KŠ FHI EU v Bratislave, Slovenská republika
Eva RAKOVSKÁ, KAI FHI EU v Bratislave, Slovenská republika
Vladimír RAVINGER, ČSOB Asset Management, správ. spol., a.s., Bratislava, Slovenská
republika
Roman RUSSEV, KAI FHI EU v Bratislave, Slovenská republika
Renáta SILNÁ, KÚ FHI EU v Bratislave, Slovenská republika

Ján SOLÍK, KÚ FHI EU v Bratislave, Slovenská republika
Alexandra ŠIPOŠOVÁ, SF STU Bratislava, Slovenská republika
Miriama ŠULOVSKÁ, KÚ FHI EU v Bratislave, Slovenská republika
Ladislav ŠVÁB, netPoint, s.r.o., Bratislava, Slovenská republika
Hana TROCHANOVÁ, KAI FHI EU v Bratislave, Slovenská republika
Miroslava VAŠEKOVÁ, KÚ FHI EU v Bratislave, Slovenská republika
Lucia VAVRÍKOVÁ, SF STU Bratislava, Slovenská republika
Pavel VONDRÁČEK, KFÚ VŠE Praha, Česká republika
Viera ZEMANOVÁ, KOVE FHI EU v Bratislave, Slovenská republika
Marián ŽABKA, KOVE FHI EU v Bratislave, Slovenská republika
Erika ŽILKAYOVÁ, KÚ FHI EU v Bratislave, Slovenská republika