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INFORMATIKU



AIESA 2005

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**„AIESA – BUILDING OF SOCIETY BASED ON
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Plenárne rokovanie

Plenary Session

Některé problémy autentizace uživatele informačním systémem

Within presented article is discussed problem of user identification by information system. Some approach is mentioned from many possibilities such as PKI method, Method using smart cards and method of combination password and some biometrics.

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Procesní podpora personálního auditu

The process improving is caused by need of the personal audit performance in institutions now. Personal audit is linked by revision of working procedures which are ensuring the activities in their business area. Process mapping, modeling and simulation made the basic analytical and communication tools of process analysis which are assigned to process improving and implementation of the new process oriented structure in organization. The article deals with possibilities of support the personal audit execution by help of the process analysis tools.

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Knowledge as an University asset

A long time under financing of university education calls to a too high attention to financing not only universities top management but individual staff members as well. Amount of “brought” money to university becomes an important indicator of “quality” of staff members, units of university and universities themselves. Tangible property, which is now the property of universities falls also into this category with all positives – first of all for richer universities and also negatives – first of all for poorer universities, but also with all consequences related to its effective utilization.

But richness of universities has never been, is not and even it cannot be tangible property – whatever important it is. Richness of universities is first of all their knowledge. The paper is devoted to richness of universities from knowledge point of view, its building, presentation and sharing in context of main universities tasks - education and research.

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Measuring unemployment in the Slovak Republic

There are two main approaches to measuring unemployment in the Slovak Republic, as follows:

1. The Center of Labour, Social Affairs and Family of the SR makes unemployment estimates based on the registers of job seekers kept by labour offices according to Act No. 5/2004 (Coll.) on employment services and on the amendments to legislation,
2. The Statistical Office of the SR estimates the unemployment rate by means of labour force surveys (LFS) carried out in households of selected dwellings.

An important precondition of a correct interpretation of unemployment data is the knowledge of the source of these data as well as methodology of the survey used. The aim of the contribution is to detail the aforementioned approaches, to provide information for the period 2000 – 2004 and to highlight reasons of differences in the results derived from labour offices' registers or from sample surveys.

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Discriminant Function as a Tool of Bankruptcy Prediction – Method and Empirical Results

Discriminant analysis consists of assigning an individual to two or more distinct populations, on the basis of observations on several characters of the individuals and a sample of observations on these characters from the populations. R. A. Fisher suggested a linear function of variables representing different characters, called linear discriminant function, for classifying an individual into one of two populations. E. I. Altman adapted this approach to identify bankruptcy risk of corporations. Altman's model of bankruptcy was estimated for various countries, thereby for Polish economy. Some results of estimation and interpretation of Altman model are presented in the paper. Methodological problems of discriminant analysis, especially fulfilling of the basic assumptions, analytical form of discriminant function, stability of the model and estimation problems are also discussed.

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Strategické úlohy FHI v svetle nového vysokoškolského zákona

The article describes some of the requirements, which come out from the new university laws and will influence the strategy and FHI work in the next years. Special attention is pointed at work of the study program leaders, new student examination strategy and Ministry of Education strategy for government subsidies and its distribution to the universities.

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Hedging pomocou opčných stratégií Long Combo a Long Strangle

Hedging with options strategies Long Combo and Long Strangle is analysed in this paper. Under analysis we understand instructions for using options strategies for hedging also advantages and disadvantages of their application. There are used profit functions from their strategies derived and published by authors before.

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Data Mining In Developing Credit Scoring: Methodological Aspects

The work reports on the comprehension that credit scoring building, by statistical and data mining procedures, is a kind of ex post facto research with the design of “criterion groups”, and describes the process of credit scoring building by data mining procedures.

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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**

Content Management System pre IS FHI - Systém na správu obsahu web stránok

Content management system (CMS) is defined as a system for creating, editing, managing and publishing web pages on Internet. This CMS has a three layer client – server architecture based on ASP.NET technology and XML. The system is considered in three different aspects, which are the administration aspect, the aspect of final product and the aspect of web page creation. The administration aspect tells about root, project and user level of administration. The aspect of final product defines major term like project, page and section. The last aspect, web page creation defines main items for creating a web page. The items are template editor, design editor, content editor, image editor, intelligent objects, banners and the core.

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Self-assessment in information security

Self-assessment tools for self evaluation of information security. This contribution refers to automate self-assessment tools ASSET and COBIT. The purpose of ASSET is to automate the completion of the questionnaire contained in NIST Special Publication 800-26, "Security Self-Assessment Guide for Information Technology Systems". COBIT has been developed as a generally applicable and accepted standard for good Information Technology (IT) security and control practices that provides a reference framework for management, users, and IS audit, control and security practitioners.

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Experiences with e-course

New information technologies implementation in education process brings not only a lot of advantages, but also many disadvantages. This contribution deals with results of process of e-learning course in study process of economic students. This article summarizes the experience with e-learning course "Programming", which was created and used at the Department of Applied Informatics The Faculty of Economic Informatics of the University of Economics in Bratislava as a part of study program in the winter term 2004/2005 of the subject "Programming 1" for the students of the 2nd and 3rd of the daily study. For the process of programming study it's important to accept and apply these new forms of education very quickly and enable the students to learn even in the dormitories and at home, and thus to create stressfree conditions for continues preparation for their education process.

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Konštrukcia systémov na podporu rozhodovania za podmienok neurčitosti a rizika

Decision problems on strategic and tactical level are unlike of decision on operative level ill-structured, because the goals of economic subjects can be inconsistent (for example maximalisation of production amount and at the same time minimalisation of emissions and imissions), or many another goals can be , witch economic subject follows. It's very well to deal with methodological principles of decision under conditions uncertainty and risk in conection with incorporation this methods into the firm information system. So much the more, that majority current systems is built on operative level

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Informačné technológie – nástroj integrácie zdravotne postihnutých ľudí do spoločnosti

This article focuses on the role of information technology as a way to better jobs for workers with disabilities and their better integration to the society. The author pays attention to strategies towards overcoming discrimination in the employment and in the society in general. An important role in this area plays European Disability Forum (EDF). This contribution underlines also the role of training and education against discrimination of disabled people in employment and in the society in general, education and training as key factors of integration and non-discrimination of disabled people, new trends in the labour market and new technologies training needs for disabled. EDFs mission is to promote disabled people's human, civil, social and economic rights; and equalisation of opportunities for all in all the EU policies, in accordance with the principles of non-discrimination. This is achieved through systematic monitoring of legislative proposals and strategic campaign work to influence policy and practice throughout the EU.

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Alternative Notations for OO Analysis and Design of the Information Systems

Formal notations and Object Algebras with classes and their relations are mostly used to refine structures, relationships, rules and constraints, implications and semantics in object paradigm. If the visual notation of the UML is not sufficient for research cases and more general or abstract work, it is possible to use also its supplement – Object Constraint Language (OCL). The other exact way is the XML extension in the UML: object structure is mapped to the UML model interchange (XMI), based on the Metaobject Facility (MOF) 1.3 Specification for the interchange and the import/export needs of the project models between various CASE systems. Object Management Group (OMG) adopted also the specification of the Human-usable Textual Notation (HUTN) in august 2004, close to the XMI standard, as the further possibility. This report will compare them and show the concrete applications.

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Analyzing of knowledge management in public administration

The society in 21 century is going to great changes. The main change is transformation of qualitative understanding of economy and ways for governing whole society to new knowledge society. The most important role is process of innovation old manners and behaviour of management in public administration. The good assumption for creating knowledge-oriented society is a relevant analysis of driving and operative flows in public administration, classification of knowledge management systems and building the systems efficient to share knowledge directly to users. These requirements are achievable by many approaches of using information technologies not only exclusively but sometimes with combination IT with traditional management systems.

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Komplex Approach to Support Managerial Activities

This paper continues and develops the theme introduced in "From Information Systems to Information Knowledge Systems" published at the "Company and Competitive Environment 2005" international science conference, where the author explained the basis of her approach to the administration and service of company information and knowledge. The aim of this paper is to introduce the recently established term "Complex System". This covers a new type of system for which new theoretical apparatus such as development methodology and life cycle development is required to be created. This article is focused purely on the definition and architecture of Complex Systems.

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Case studies - advanced information technologies education approach

The following article describes how teaching process is handled in subjects Case Studies A and Case Studies B. Subjects are organized so that the process is as close as possible to the practical application development. Most of the internal application development team functions take part of the learning process including team leaders, testers and different level programmers and designers. The main aim of the subjects is to simulate real development in all its dimensions - application size, difficulty, team leading, communication, documentation and testing.

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Problémy objektovo orientovaného prístupu tvorby IS

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.

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Trends of Information Society: electronic business analysis in European Union

Knowledge economy development is determined by rapid growth of info-communication technologies usage in many economy and society areas. From the economic development aspect, the most important development we are able to see in commercial sector. By effective ICT usage, the company gains competitive advantage on global market. Decision support in this field is focusing mainly on benchmarking studies in different European industries and regions. In the paper, authors analyze usage, barriers and trends of electronic business in EU countries through different industries. Authors draw from data and experiences of eBusiness w@tch correspondents.

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CRM model approach

Customer relationship systems play a very important role in the operation of a company first of all if a company has lots of registered clients. The new CRM approaches give us a new possibility to get an advantage upon the competitors in the market. The benefits of ERP systems have already been exploited and now it is necessary to look for new tools.

Customer relationship management is an old concept but not in this modern conception. The development of IT areas has given us new ways and a new system seems to emerge. The theoretical and methodical background has not been defined properly so it is of great importance to clarify the basis of CRM including definitions, elements, function areas, processes and human resources. It is the main aim of the article.

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E-business, a new way in business

Using Internet in E-commerce is one of the trends of our time. Report focused on discussing the new types of pursuing business with the help of Internet, namely E-business, with a special emphasis on the prevalent group of entrepreneurs – small and medium enterprises. Also development and current status in E-business. Possible trends of E-business and forms of electronic trading are presented. The final section of this report discusses the data transfer security and electronic signature and to map this interesting field and to point at specific problems connected with on-line shopping implementation. The reason why I picked e-business is that the aforementioned forms of business are flourishing in developed economies and have also been well established in our local environment.

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Automative Balanced Scorecard (ABSC): The Means for Measuring Strategic Organization Achievements

This article describes the software product STRATEG, the product of a complex structure, great possibilities, rich functionalities and complete BSC automation. The word STRATEG is not an acronym, but it symbolizes the substance, complex structure and value of the system for decision support system (DSS) in the processes of strategic management. The product is designed and built as a fruit of the long-range project “Decision Support System in Strategic Management”.

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Business Process Total Support Complex IaC System

Knowledge based economy assumes complete specific information on time at place whenever/wherever it is necessary to make decisions. This involves not just collecting accounting and statistic data in terms of reporting, but more stochastic process of getting the data into the information system at the time and place of their formation and of course the process of data redistribution and further evolution within organization's business processes. This article forms concept and framework for complex proactive information and communication systems, that support all written above.

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Education of projectants and managers IT projects

This contribution refers to specifications of projecting informational systems according to companies needs in conditions of globalizations and in dynamic development of informational technologies. Individualism, narrow specializations, knowledge protection and creativity must be harmonized to the team needs. The task for the project managers of informational systems is to reach , let the expert knowledges, qualification and peoples needs were used for reaching optimal solution, from the system point of view. Into this goal must be submitted the selection and education of managerial workers and also informational systems projectants.

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2. sekcia

2nd Section

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

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

Manažérske účtovníctvo ako nástroj zabezpečovania informácií pre strategické riadenie

Management Accounting as a part of the accounting information systems provides for management economic information for effective decision-making and control systems. Progress in information technologies continuously raises demand for management systems and management accounting. Focus of management accounting is extended to strategic management to affect long-term costs, revenue, profit and other factors.

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The influence of the membership in the European Union on the taxes of the Slovak Republic

Through the medium of the entrance of the Slovak Republic to the structure of the European Union it is not possible to ignore the harmonisation's requirements. The harmonisation does not mean the absolute acceptance of tax standards. Anyway, it should lead to a very closed convergence of the taxations of different countries. Therefore tax changes and reforms can influence a total development of the economy, both in positive and negative way.

The aim of this paper is to analyze the qualitative changes of the Slovak tax system, to focus on their positive aspects (to which belongs stimulation of the enterprise units) as well as on risky areas of the reform.

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Financial allocation on technical provisions resources in the Czech Republic

The subject of insurance companies is to provide insurance protection based on commercial principles. Insurance companies cannot be treated only as companies offering insurance protection, but also treated as important investors who as a result of their activity dispose with temporary available resources of their customers. They create provisions from resources of collected premiums, which are used in the case that insurance event happens. This paper deals with financial allocation of technical provisions resources and that are lands and buildings, equity and debt securities and other assets which occur in financial allocation of insurance companies are discussed separately.

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Balance sheet theories

Balance sheet theories specify the function of the balance sheet. They are based on the valuation - the material side of accounting. Balance sheet theories are relatively new, they were developed basically after the 1st World War.

Classic Balance sheet theories are:

- Static balance sheet theories,
- Dynamic balance sheet theories,
- Eudynamic balance sheet theories,
- Nominalistic balance sheet theories and
- Organic balance sheet theories.

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Human Resource Accounting (HRA)

Human resource accounting (HRA) as an approach was originally defined as the process of identifying, measuring and communicating information about human resources in order to facilitate effective management within an organisation. It is an extension of the accounting principles of matching Danimir Gulin

costs and revenues and of organising data to communicate relevant information in financial terms. HRA deal with two important issues: how to assess the value of human capital in addition to an enterprise's tangible assets and how to improve the development of human capital in enterprises.

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Influence of stock market manipulations on financial statements

In financial and accounting literature and practice the terms «manipulation» and «speculation» are often used, usually as synonyms. These terms are interpreted as machinations, tricks or cheating. In terms of activities, these terms are interpreted as intentions to achieve a quick and easy profit, using permitted and non-permitted means. In further text the term manipulation will be used.

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Significance of Environmental Cost Calculation According to European Union Membership Conditions

Proposed research paper assesses the importance of environmental costs evaluation after the Slovak republic joined the European Union where all companies must adapt to new regulations the aim of which is the protection of the environment.

In the beginning, the paper lists the crucial environmental laws which may have influence on company's costs. Second part explains the term "environmental cost" and risks of its disregarding. The method and technique of calculation of environmental cost is described in the third part of the paper. The activity based costing method was chosen as the most sufficient for the calculation of environmental costs. The last part explains the contributions of environmental costs calculation to company.

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Goodwill in separate and consolidated financial statements

Goodwill is one of the accounting issues that have not been satisfactorily solved yet. This contribution deals with the goodwill in separate and consolidated financial statements in accordance with IAS/IFRS and accounting legislation of the Slovak Republic. The contribution's primary focus is on the comparison of IFRS 3 – Business Combination with accounting legislation of the Slovak Republic in the scope of the recognition, the measurement and accounting for goodwill in business combination.

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Zdravotné poisťovne ako súčasť komerčných poisťovní

This paper presents function and accounting of health insurance's

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Zobrazenie rizika a neistoty v účtovníctve

Mechanism of market economy is connected with the existence risk and uncertainty. This paper present risk and uncertainty in the accounting some entities.

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Ing. Jarmila Krasňanská, PhD., Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska
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Kategorizácia peňažných pohľadávok bánk, cenných papierov držaných do splatnosti a niektorých záväzkov od 1. januára 2005 v porovnaní s doteraz platnou právnou úpravou

The contribution deals with classification of receivables, some liabilities, debt securities held to maturity and some liabilities in banks, according to the new Arrangement of the National Bank of Slovakia with effect from January 1st, 2005 compared with the legislation valid up to the present time.

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Ing. Dagmar Boušková, PhD., Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Financial Statements in the context of International Public Sector Accounting Standards (IPSASs)

Financial statements belong to the basis problems of accounting of public sector entities which are solved in International Public Sector Accounting Standards (IPSASs). The article deals with basis provisions of IPSAS 1 – Presentation of Financial Statements. The objective of this Standard is to prescribe the manner in which general purpose financial statements should be presented in order to ensure comparability both with the entity's own financial statements of previous periods and with the financial statements of other entities. To achieve this objective, this Standard sets out overall considerations for the presentation of financial statements, guidance for their structure, and minimum requirements for the content of financial statements prepared under the accrual basis of accounting.

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Ing. Alena Kordošová PhD. Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Ing. Marianna Kicová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Audit of final accounts and review of municipalities' budgetary control in the Czech Republic

The paper covers the problem of community management control. It is focused on legislation of municipality, brief description of review and audit of final accounts of municipalities' budgetary control and summary of final report. There is, among others, account and settlements to state budget, to budget of municipalities subjects reviews. In connection with membership of Czech Republic in European Union, for municipal authorities, there will be necessity to prove justice of claim, usany and efficient allocation of resources from EU funds.

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Methods and techniques used in audit

Target of this article is to point out methods and techniques used in audit. Analytical process is a summary word for description of techniques used for measuring total true view of the book-keeping data. Auditor is to use the analytical process during planning and audit checking.

Target of the financial statement audit is to enable auditor to express his opinion if the financial statements are drawn in all necessary contexts and in accordance with identified framework of financial statements.

Audit is always a risk to a certain level for auditor. He reviews risk of each order to decide if the order is accepted and if it is, to work out a corresponding audit plan.

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

Legal and Accounting Aspects of Slovak Insurance Companies System within European Area

Slovak commercial insurance companies have been the integral part of European insurance market since 1. May 2004. Requirement on the involvement of Slovak insurance companies in the European area is aimed at the integration of Slovak legal and accounting system with EU legal rules. The article deals with describing the current position and perspectives of this process.

Ing. Jitka Meluchová, PhD., Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Hedge Accounting – International Concept

Because of international globalisation of financial markets the importance of hedging is growing. Therefore was necessary how to report and measure the hedging. The main important accounting standard in this way is IAS 39 Financial Instruments: Recognition and Measurement. Hedging could be recognised as a hedging only in case that conform to the criteria mentioned in IAS 39. Otherwise it cannot be reported as a hedging. In accounting we differ 3 basic types of hedging: cash flow hedge, fair-value hedge and the hedge of net investments in a foreign entity. In 2003 was issued standard IFRS 1, which deals with the problem of first adoption of IFRS. In IFRS 1 are defined the requirements, when the hedging could be reported as a hedging in accounting. Finally the requirements of the Czech and Slovak legislature are nowadays quite similar as requirements of IFRS/IAS.

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Oceňovanie majetku podnikateľských subjektov v Maďarskej republike

Paper discusses possible ways of valuation of each property of business subjects providing their activities in Hungary. Valuation specifics in Slovakia and Hungary will appreciate especially those investors with foreign property share performing in both countries. Paper discusses only a part of legislative principles concerning the property valuation, mainly those of anticipated interest of Slovak investors in Hungary. This paper could contribute to knowledge increase of specialists in the area of accounting.

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Ing. Anna Bánociová, Ekonomická fakulta TU v Košiciach, Letná 9, Košice

The importance of comparative accounting different countries

The scale of international differences in corporate financial reporting is very large. This fact is right reason for studying comparative international accounting. This article deals with historical reason, the multinational reason, the comparative reason and harmonization reason like importance of comparative accounting. These four reasons are closely linked. In studying comparative international accounting is also importance issue choice of country studies.

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The prepare of the Extraordinary Financial Statements of the Slovak legislation

The extraordinary Financial Statements shall prepare in the extraordinary events. For users of information from this Financial Statements has the high interest, because there are others information inside as in an Ordinary Financial Statements. An accounting entity shall prepare the Extraordinary Financial Statements from the Slovak legislation as of the date of its dissolution according to instances prescribed by special legislation, as of the date of its winding – up liquidation (for example: for Amalgamation Intro and Separate Accounting Entity and Demerger), as of the date preceding the date entry into liquidation or the effective date of a declaration of bankruptcy and settlement.

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

Odložená daň v účetnictví České republiky a její vliv na vlastní kapitál

Since 2004 all accounting units in the CR dealing with balancing of books in the full extent have got a duty to account a deferred tax. In spite of the fact that this accounting category was introduced to the system of accounting at the beginning of the nineties, its significance is not fully seen and appreciated in the Czech practice. The paper is focused on the substance of the deferred tax calculation, on the deferred tax reflection into cost accounts with the impacts on the company own capital.

doc. Ing. Viola Šebestíková, CSc., Katedra účetnictví, Ekonomická fakulta, Vysoká škola báňská-Technická univerzita Ostrava, Sokolská tř. 33, 702 00 Ostrava

The explication of the concept of accounting

There is the theoretical and practical aspect of accounting examined in the contribution. Based on the analysis of accounting as a science and accounting as a practical discipline the definition of accounting is deduced in the same way as accounting is taken in the market economy with strong elements of informatisation of the society.

prof. Ing. Anna Šlosárová, PhD., Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

VS generally accepted auditing standards - a significant phenomenon in audit sphere

The objective of the ordinary examination of financial statements by the independent auditor according to US Generally Accepted Auditing Standards is the expression of an opinion on the fairness with which they present financial position, changes in financial position, results of operations, and cash-flow in conformity with Generally Accepted Accounting Principles (US GAAP). The audit report is the end-product of a process in which auditing procedures are performed to gather the necessary evidence to attest to the fair presentation of financial statements. US GAAS are standards auditors must comply with by performing audit. They are divided into general standards, field standards and reporting standards and constitute a framework and measurement of the quality of professional work.

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

Cost-Based Pricing of Interconnection Services in the Slovak Telecommunications Market

In September 2004, the Telecommunications Office of the Slovak Republic issued its first methodology for calculating interconnection prices. Its chosen technique sets prices based on a benchmark index of prices charged across the European Union. The intent of this paper is to analyze the advantages and disadvantages of this approach. More specifically, the Slovak methodology is examined in light of the recommendations for interconnection pricing put forth by the EU, which favor cost-based price setting derived from long-run incremental cost. Finally, the pricing guidelines in Slovakia are considered alongside the methodology employed in the Czech Republic.

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Croatian Experience in Internal Audit Functioning in comparison with European Union

The most important results of the empirical research on the situation and possibilities of development of internal auditing in the Republic of Croatia and European Union have been presented in this paper. The analysis shown and the estimate of the existing state and possibilities of the development of internal auditing include the examination of the presence of internal auditing in practice, the needs of its organization in the future, and the functioning of internal auditing in those companies where it exists. Furthermore, there is a major overlap in answers provided by Croatian organizations and those operating in the European Union. Of course, there is some key differences. In view of the scope of the research, the number of the surveyed companies and the number and content of the questions included in the questionnaire, the obtained results can serve as a starting point in working out future initiatives and activities aimed at the promotion of the role of internal auditing in improving the competitiveness of the Croatian economy.

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Tax aspects of fusion, merger and divide of business companies according to slovak tax legislation.

Tax law has always exerted strong influence on accounting, thus determining both the level of current returns to investors and the value of a company. In recent years, however, a target model of income tax allocation seems to have finally been elaborated, in the form of solutions prescribed in international legislation. The aim of paper is calculate tax base in case of fusion, merger and divide of business companies. This tax base will be appointed with the assistance of profit/loss.

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Ing. Miloš Sklenka, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Problémy účtovania a zdaňovania rezerv podnikateľov v Slovenskej republike

The provisions are specific category of liabilities. There are liabilities of uncertain amount or timing. The natures of the account about liabilities are showing correctly profit and how are provisions in control of equity high. In this paper we are analyze influence of provisions on tax base.

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Ing. Sylvia Kastlerová, Katedra účtovníctva, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Impairment of assets - IFRS compared to regulation in SR

The impairment of assets is an instrument of a prudence principle application. Under IAS/IFRS it is regulated with IAS 36 that was improved in 2004 together with the first phase of business combination project. IAS 36 is very theoretic and the enterprises have often some difficulties with its application in actual cases. In SR the impairment is regulated with a relevant accounting law. The main difference between regulation under IAS/IFRS and regulation in SR is in determination of amount of impairment loss.

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

Reporting Financial Performance: Contemporary developments and Directions

Income, expenses, gains, and losses with similar informational properties can be aggregated and presented as subsets of comprehensive income without losing information. The increasing use of fair values in financial statements now reveals the deficiencies of the current presentation format under IAS/IFRS. Many companies do not consider the required disaggregation and classification of profit components as useful for the evaluation of an entity's performance. Consequently they define and display their own company-specific categories in financial reports, which are often referred to as "pro-forma-earnings". This paper analyzes the concept of comprehensive income and examines proposed approaches to the reporting of financial performance within the joint project of IASB and FASB on Reporting Financial Performance.

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3. sekcia

3rd Section

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

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

John von Neumann

If the influence of a scientist interpreted broadly enough to include impact on fields beyond science proper, then John von Neumann was probably the most influential mathematician who ever lived. Not only did he contribute to almost all branches of modern mathematics and created new fields, but he also changed history after the Second World War by his work in computer design and by being a sought-after technical advisor to the post-war military-political establishment of the U. S. A.

doc. RNDr. Jan Coufal, CSc., Department of Mathematics, Faculty of Informatics and Statistics, University of Economics, Ekonomická 957, 148 00 Prague 4 , Czech Republic

Factorization of Bimodal distribution

Given is the method of the factorisation of the bimodal distribution in the linear combination of two appropriate unimodal distributions. Least squares method and Excel are used.

doc. RNDr. Arnold Dávid, CSc. , Katedra matematiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Mgr. Anna Strešňáková,, Katedra matematiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

The first use of symbols in Mathematics

Since the Pythagorean epoche, the main stream of thinkers, which used mathematics, refrained from the mystic concept which attributed a magic meaning to numbers and mathematics symbols. At present, we stress the relationship between numbers and symbols. Mathematics is now based on structures, models and mutual relations. Nevertheless, the understanding to quantitative relations is distant to the innate abstract thinking. We are now able to find important steps which lead from basic concept of counting to sophisticated inherited schemes. It was required the choice of suitable way of writing numbers and the reasonable base for the number system used to record the numbers. Thanks to all that, it was possible to reach the extension to fractions, multiplication and division. Then the mathematicians abstracted the mathematical procedures from these specific examples, which gave the impetus for this abstraction.

RNDr. Lada Eliášová, University of Economics, Department of Mathematics, W. Churchill Sq.4, 130 67 Prague 3, Czech Republic

Dynamic financial analysis for Nonlife insurance

Dynamic financial analysis (DFA) historically came out as a stochastic alternative to deterministic sensitivity or stress testing methods for non-life insurers. Unfortunately, there is no commonly accepted standard, however we can say, that the DFA provides a tool for profit analysis, capital allocation, calculation of an effective solvency margin and its relationships. DFA is a systematic tool based on a large number of mathematical and statistical simulations of integrated financial models with the objective of risk and future profit estimation.

Ing. Marián Hrotka, Finančný analytik, Group insurance operations, Assicurazioni Generali S.p.A., Head Office – Italia, 34132 Trieste, piazza Duca degli Abruzzi, 2

Analysing seven rules - the patterns in the control charts that help professionals working in the field of quality to identify the presence of assignable causes of variation in the process

In this paper the authors analyse a seven rules (the patterns in control charts), that can to help quality professionals interpret information contained in \bar{X} -charts or in any control charts for which the probability distribution of the corresponding statistic is approximately normal.

doc. Ing. Lubica Hrnčiarová, PhD., Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

doc. Ing. Milan Terek, PhD., Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Countents of the indicator added value

The paper consists the suggestions to improve indicator of added value.

doc. Ing. Jozef Chajdiak, CSc., Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Metódy poradií pri lineárnom usporiadaní objektov

The article presents various methods of ordering multidimensional objects. The ordering method MAPPACC (*Multicriteria Analysis of Preferences by Means of Parwise Actions and Criterion Comparisons*) was compared with the classical approach of ordering.

RNDr. Viera Labudová, Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Simulations of the Extreme Losses in Non-Life Insurance

Modelling of loss distributions in non-life insurance is one of the problem areas, where obtaining a good fit to the extreme tails of a distributional model is of major importance. It is a thesis of this paper that the use of models based on quantiles provides an appropriate and flexible approach to the distributional modelling needed to obtain well-fitted tails and to simulate the extreme losses.

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Mgr. Erik Šoltés, PhD., Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

A comparison of poverty in Slovakia and European Union countries

The article will discuss the goals of instructions given in the material „Millennium Development Goals“ for Slovakia to reduce poverty. We will point out to the methodology of EUROSTAT and to make some comparisons of poverty among Slovakia and European Union countries.

Ing. Mária Pažitná, PhD., Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Application of statistics in marketing research

This paper is part of the output of the research grant project VEGA No. 1/2555/05 „Implementation of Marketing Theories in selected Slovak Universities“. Its ambition is demonstration of the fact that only appropriate utilization of statistical arsenal can provide externally valid results in marketing research. Paper reminds many common errors in statistical research incl. marketing research. It also tries to promote multivariate exploratory techniques with wide range of application in marketing research.

Ing. Marián Rimarčík, PhD., Ekonomická univerzita Bratislava, PHF EU v Košiciach, Tajovského 13, 040 30 Košice

Impact of age of insured person on the extra premium

The aim of this note is the quantification of extra risk for endowment assurance. There are three ways of doing this for extrarisk risks: percentage of normal mortality, addition to the age, addition to the rate of mortality. We convert this three types of quantification using the notion of extra premium for different ages.

doc. RNDr. Katarína Sakálová, CSc., Katedra matematiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Ing. Mgr. Ingrid Krčová, Katedra matematiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

The Contributions of the Age-groups to the Change in the Life Expectancy at Birth in the period 1991 - 2000

The life expectancy at birth is the synthetic indicator of the mortality tables that comprises the mortality conditions in all of the age-groups. It represents the average length of life a newborn, based on assumption that the constant mortality will be preserved.

The contributions of the age-groups to the change in the life expectancy at birth allow us to specify the real relevance of the various changes in the intensity of mortality. It is an approach that simultaneously considerate the particularity as for the age-structure of the deaths, order of the populations dying out, as the characteristic extend in the intensity of mortality changes in the period 1991 – 2000.

Ing. Soňa Sandtnerová, Katedra štatistiky, FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Possibilities of the design of control charts in the statistical process control

This contribution deals with the known approaches to the design of the control charts – heuristic, economic, statistical and economic statistical design. We think in the context of Shewhart control charts for variables. Given conclusions can be enlarged also on the other types of control charts. The brief comparison of the approaches is described in the conclusion.

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doc. Ing. Eubica Hrnčiarová, PhD., Katedra štatistiky FHI EU v Bratislave, Dolnozemska cesta 1, 852 35 Bratislava

Ing. Iveta Lišková, Autorizované školiace stredisko PRISMA, H. Meličkovej 14, 841 05 Bratislava

Exploitation of the artificial neural networks in the Knowledge Discovery in Databases application area

This article deals with the artificial neural networks as the models of the sub-symbolic methods of an artificial intelligence in the Knowledge Discovery in Databases application area. It describes the general properties and a mathematical model of an artificial neuron. It presents a multilayer feed-forward artificial network and a self-organizing map based on the competitive learning. These types of the artificial neural networks represent the applicable tools for problem solving used in the most frequent data mining tasks – classification, prediction and clustering.

Mgr. Eva Uhrinčat'ová

Cluster analysis apply to industrial enterprises

Cluster analysis is the generic name for a wide variety of procedures that can be used to create classification. The source of data are anonymizing enterprising data sets on food industry of the Slovak Republic in the year 2002. They are concentrated on characterization of the economic efficiency of enterprises.

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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**

Simulation of price fluctuations' spread in national economy – concept

This paper deals with the frame conception design of multiagent simulation system of price fluctuations' spread in economic environment which is based on pricemaking rules. The paper classifies base subjects types and summarizes supposed pricemaking rules and structure of relations among subjects in economy. It follows concept of simulation model which must be able to "insert" government interventions into virtual environment because primary model's use is experimental research of the income taxes' ability to affect price level in national economy.

Ing. Martin Babiak, Katedra financií, Národohospodárska fakulta, Ekonomická univerzita v Bratislave

Approaches to efficiency measurement

The paper gives a brief review of the nonparametric approach to efficiency measurement or Data Envelopment Analysis as it is known in the operations research literature. DEA is a mathematical programming approach for considering optimum solutions relative to individual units (e.g., firms) rather than assuming, as in optimized regression, that a solution applies to each decision making unit (DMU). Inequalities are derived between the efficiency measures when different assumptions are made on the technology sets or on the behavior of managers. Finally, DEA methods for measuring the relative efficiency of production units are compared with the more traditional index number and econometric methods.

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

Models of price regulation in network industries

The aim of the paper is to examine the equilibrium conditions in the market of network industries. This issue bears an increased attention under conditions of economic influence of network industries in the national economies since the second half of the twenties of the last century. This tendency is especially visible particularly in the context of economic globalization and increased significance of the supranational entities.

The objective of regulation mechanisms is to find an appropriate proportion between price and product supply of network industry under assumption of the existence competitive market. With regard to analysis of equilibrium in network industries models it is important to point out that except for competition policy protection the state fulfils another specific task – regulation of network industries. The state influences proportional relations between price and supply of network industry production

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

M | G | ∞ Queue System Transient Behaviour With Time Origin At An Operation Beginning Instant

We present in this paper the transient probabilities for the M | G | ∞ queue with time origin at an operation beginning instant. Then we show very interesting results for the behaviour of these probabilities as time functions, in terms of the service time hazard rate function, also important in the study of the M | G | ∞ queue busy period.

Manuel Alberto M. Ferreira - Full Professor, Departamento de Métodos Quantitativos of ISCTE, Av. das Forças Armadas, 1649-026 Lisboa – PORTUGAL

Multicriteria evaluation on the Slovak regional labour market data

Based on cross-section data for all 79 Slovak counties in 2004, we have selected the criteria (average wage, vacancy rate, unemployment rate, rate of infrastructure development) that form labor market quality. Based on these criteria we have ranked the market attractiveness of Slovak counties using PROMETHEE and AHP methods of multi-criteria evaluation. We have concluded that labor market attractiveness largely varies across the country and increases in the westward and northwestward direction.

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Ing. Pavel Gertler, externý doktorand, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Analysis of Exchange Rates SKK/EUR and CZK/EUR

This paper deals with the analysis of daily values of the SKK/EUR and CZK/EUR exchange rates using the GARCH (1,1) model of conditional heteroscedasticity. It was tested the existence of the Monday effect, the end-of-month effect and the end-of-month Monday effect as it was documented in case of stock returns in several papers (see e.g. [1],[5],[9],[10],[12]) and also the day-of-week effect. The analysis has shown no evidence of statistical significance of the Monday effect and the end-of-month Monday effect in both cases, the existence of the end-of-month effect has been proved only for the SKK/EUR exchange rate, and finally, the day-of-week effect has been proved to be significant for Wednesday in both cases.

Ing. Michaela Chocholatá, Katedra operačného výskumu a ekonometrie, FHI EU v Bratislave, Dolnozemská cesta 1, 852 35 Bratislava

Discret Dynamic Multiplier

This paper is devoted on the study of dynamic multiplier at discrete Robertson's or Lundberg's lag. The main result is following: if the marginal propensity to saving is constant ($0 < s < 1$) then the dynamic multiplier at the lag about one period gives the following progress of the income

$$Y_t = \frac{A}{s} + \left(Y_0 - \frac{A}{s} \right) (1-s)^t$$

that converges to the stationary level given by static multiplier $\frac{A}{s}$.

RNDr. Rastislav Jurga, PhD., Katedra hospodárskej informatiky a matematiky, PHF EU, Tajovského 11, 041 30 Košice

Power utility of consumption

The paper is analyzing the portfolio choice with respect to investor's consumption. It defines utility function through the consumption. This theory was applied on real data of Czech capital market.

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Ing. Robert Kotes, ARABELA, Ševčenkova 10, Bratislava 5

Prediction of assets prices in equity market with neural networks

This paper presents results of neural network based trend prediction for equity markets. Raw equity exchange data is pre-processed before being fed into a series of neural networks. Multilayer neural network has been successfully applied to the time series forecasting. Steepest descend, a popular learning algorithm for backpropagation network, converges slowly and has the difficulty in determining the network parameters. Also, the commonly used random weight initialization does not guarantee to generate a set of initial connection weights close to the optimal weights leading to slow convergence. The daily trade data of the listed companies from NASDAQ and NYSE is collected for technical analysis with the means of neural networks. The results find that neural networks can model the time series satisfactorily, whatever which learning algorithm and weight initialization are adopted. The resulting primary simulation is a neural network that can prediction whether the next price of stock will be, on average, higher or lower than the current.

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Comparison of basic econometric strategies

The actual econometric modelling offers several modelling strategies, which differ in theoretical foundations and the way of construction models. All of them were arisen as the reaction for critics of the classical approach, which was consensus both the theoretical foundation and the empirical specification of econometric modelling up to the 1970s. The classical approach was then substituted by a number of prominent methods of empirical research as the London School of Economics approach, the vector autoregressive model approach and the intertemporal optimization/calibration approach. The comparison of these main econometric strategies demonstrates possibilities and restrictions of every approach.

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Econometric forecasting

The paper presents an application of computable general equilibrium model on Slovak economy. Initial equilibrium solution is computed by Excel Solver. On the model there are defined and computed various problems that illustrate how the economy responds to the following changes in exogenous variables or parameters: 10 % increase at available time, 5 % decrease at rate of corporate income tax, implementation of 5 % rate of investment subsidy, 11 % decrease of rate of employer's social contribution.

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The Analyse of Multipliers Based on Social Accounting Matrix

In this paper we count multipliers of Slovak economy and make analyse of them. This multipliers are based on Social Accounting Matrix (SAM). We present three types of multipliers. The first type represents effects of transfers. The second shows circular effects of an income injection going round the system and back to its point of origin. And the last type describes cross-effects of the multiplier process. There is an injection goes from one part of the system to other one. In the whole paper we use SAM constructed with data from Slovak National Accounts, published in 2001.

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How to Select a Candidate?

The aim of this paper is to present, through game theory, how to choose the best policy which gives the order in which potential candidates can be offered to the nomination for a job maximizing the expected number of the points given to each one.

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The Usage of the Datamining for the Modelling of the Withholding Tax

The withholding tax belongs to the category of the worst predictable taxes at the Tax Directorate of the Slovak Republic. We created a program, which should help to solve the problem and find the “right” model. The program is written in VBA in Excel. It contains polynomial transformation to solve the multicollinearity problem and Godfrey – Breusch test of the serial correlation. The program requires powerful hardware. Future will show how successful we will be in predicting the withholding tax on the monthly bases for the State Treasury.

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Model of minimize costs for rebuilding of the production line

The model task was to minimize costs for rebuilding of the production line. In order to find the right solution for this larger scale task the heuristic algorithm with the linear difficulty is used. The effectiveness of the heuristic algorithm is tested by comparing results obtained by method of explicit enumeration and heuristic method for the generated tasks. The optimization and heuristic method was programmed in Visual Basis under application MS Excel.

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Diskrétné modely rozmiestnenia zariadení – integrované modely

Over the past few decades, the concept of integrated logistics systems has emerged as a new management philosophy which aims to increase distribution efficiency. This paper examines location-routing problems and location-inventory problems, proposes a simultaneous approach to incorporate vehicle routing, inventory (economic order quantity and safety stock decisions) into typical facility location models.

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Testing for Weak Form of Efficiency of Czech Stock Market

The efficient market hypothesis is almost certainly the right place to start when thinking about asset price formation. The new equity markets in Central Europe present decidedly mixed picture with respect to their efficiency. The object of this paper is to investigate whether prices in Czech Stock market follow a random walk process as required by market efficiency. The presence or absence of random walk in the price generation process in a stock market is evaluated using Czech stock market indices PX 50 and PX-D. These stock indices are tested for a random walk using different methodologies.

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Time consistency and policy

In the paper implications of the time consistency following (Chari, V. V., Kehoe, P. J., Prescott, E. C., 1988) are reviewed. Time consistency problems will be illustrated in four models: simple model of economy, capital taxation model, model of default on government debt and money and real and nominal capital model. The last one, similar to capital taxation model, listed in (Alvarez, F., Kehoe, P., J. and Neumeyer, P., 2004), deals with optimality of Friedman rule of setting nominal interest rates to zero (Friedman, M. 1969) problem.

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