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## СОДЕРЖАНИЕ

Применение математических методов в экономике — Колесов Д. Н. ....	3
<b>♦ Макроэкономическое моделирование</b>	
<i>Борисов К. Ю., Фадеев В. Ю.</i> Эндогенный экономический рост в условиях глобализации: подход к моделированию .....	7
<i>Калениченко В. В., Сурицов Л. К., Шалабин Г. В.</i> Анализ проблем экономического роста России с использованием динамической многоотраслевой модели Неймана .....	13
<i>Гиленко Е. В.</i> Вторичная занятость: специфика теоретического моделирования .....	26
<b>♦ Стохастические модели принятия решений</b>	
<i>Вавилов С. А., Ермоленко К. Ю.</i> Обобщенная задача стохастического управления инвестиционным портфелем .....	36
<i>Васенёв Ю. Б., Дементьев И. А., Михайлов М. В.</i> Модели измерения показателей качества в системе менеджмента университета .....	47
<i>Колесников Г. И., Хованов Н. В., Юдаева М. С.</i> Применение метода квантификации нечисловых оценок вероятности для выбора оптимального портфеля ценных бумаг .....	58
<i>Михайлов М. В.</i> АСПИД-методология как инструмент измерения качества подготовки специалистов в вузе .....	69
<i>Хованов Н. В.</i> Простая модель обмена: аддитивные и мультипликативные монетарные индексы меновой ценности .....	83
<b>♦ Эконометрика</b>	
<i>Колесов Д. Н., Котов Н. В., Федоренко А. С.</i> Совместный учет статистической и экспертной информации при прогнозировании временных рядов экономических показателей .....	93
<i>Конюховский П. В., Подкорытова О. А.</i> «Длинная память» в обменных курсах .....	102
<i>Мардас А. Н.</i> Эконометрические подходы к формированию сбалансированной системы показателей .....	110
<b>♦ Моделирование инвестиций и производства</b>	
<i>Воронцовский А. В.</i> Иммунизация портфеля облигаций при условии непараллельного сдвига кривых ставок процента .....	119



<i>Ермоленко К. Ю.</i> Оценка фундаментальной стоимости компаний на основе метода рыночных мультипликаторов в сочетании с процедурой рандомизации .....	130
<i>Коростелева М. В.</i> Некоторые методы анализа чувствительности внутренней нормы доходности инвестиционного проекта .....	145
<i>Парфенова В. Е.</i> Целевая модель выбора мероприятий для повышения результативности хозяйственной деятельности .....	153
<i>Тютюкин В. К.</i> Минимизация производственного цикла в роботизированных модулях .....	159
<b>◆ Применение теории кооперативных игр</b>	
<i>Тубина А. Л., Бруссер П. А., Соловьева М. Ю.</i> Применение методов теории кооперативных игр в исследовании моделей частно-государственного партнерства .....	170
<i>Кепке К. М., Налетова А. С.</i> Применение методов теории кооперативных игр в исследовании рынка логистических услуг Санкт-Петербурга .....	181
<b>◆ Краткие научные сообщения</b>	
<i>Волгин В. В.</i> Задача формирования оптимального портфеля проектов капитальных инвестиций .....	189
Аннотации .....	194
Contents .....	198

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## АННОТАЦИИ\*

*Borisov K. Yu., Fadeev V. Yu.*

### **Endogenous economic growth under globalization: an approach to modeling**

A growth model of a globalized economy combining an AK-model and a model of exogenous economic growth is proposed. A distinguishing feature of this model is that economic growth can be considered exogenous for a particular country, but is endogenous for the world economy as a whole.

*Kalinichenko V. V., Surovchov L. K., Shalabin G. V.*

### **The analysis of economic growth in Russia using a dynamic multisectoral Neumann model**

In this paper, the modification of the well known Dynamic Neumann model is developed in order to study Russia's economic growth. Some results of simulation experiments are presented. The perspectives of theoretical and applied research based on the proposed modification of the Neumann model are discussed.

*Gilenko E. V.*

### **Moonlighting behaviour: peculiarities of theoretical modelling**

The article deals with the peculiarities of a modern approach to modelling moonlighting behaviour. The main assumptions of the basic model are discussed. The two main cases of moonlighting are considered: the case of limitations of hours of work at the primary job and the case of heterogeneity of primary and secondary jobs. Importance of the assumption of sequential primary and secondary job taking is shown.

*Vavilov S. A., Ermolenko K. Yu.*

### **The generalized problem of stochastic control of an investment portfolio.**

The problem of control of an investment portfolio including an arbitrary number of different types of securities and cash under the assumption that prices follow the stochastic process is under consideration in the paper. The presence of the multiplicative effect is theoretically proved and experimentally confirmed. This phenomenon can be explained by higher profits

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\* Редактор перевода на англ. язык Г. В. Борисов.

in comparison with those gained from independently controllable portfolios each containing only one definite type of securities. Possible risks and the effective method of risk management are discussed.

*Vasenev Yu. B., Dementev I. A., Mikhaylov M. V.*

**One of the approaches to describing and evaluating the basic work process and a performance index of the university quality system**

A new approach to the development of the system of quality and quantity performance indexes representing organizational units is proposed. This approach is based on the method of aggregates and composite rating. The capacity for work of this approach is demonstrated through valuation of the chairs' work quality.

*Kolesnikov G. I., Hovanov N. V., Yudaeva M. S.*

**Applying a quantification method of non-numerical probability estimation for an optimal selection of securities portfolio**

A method based on a randomized quantification of non-numeric information on alternatives' probabilities is developed. The method is used as a tool for a selection of securities portfolio, which takes into account numerical data on securities quotations along with non-numeric experts' evaluation.

*Mikhaylov M. V.*

**The ASPID-methodology as a measure for quality evaluation of the training in higher education**

The article is devoted to the question of a usage of the randomize aggregative indices method in quality management of supreme vocational training. The method is employed under a hierarchical system of criteria indexes. The method allows to build numerical estimates of the training quality in higher education under a condition of incompleteness of information on an evaluated object. The author proposes the methodology of interpreting received estimates, which allows to use them in decision making. Numerical examples are given.

*Hovanov N. V.*

**A simple exchange model: additive and multiplicative indices of value in exchange**

On the base of an extended simple exchange model, a system of additive and multiplicative monetary indices of value in exchange is developed. Some opportunities of a usage of the developed mathematical methods in the phenomenological theory of meta-money are discussed.

*Kolesov D. N., Kotov N. V., Fedorenko A. S.*

**The combination of statistical information and expert appraisal for the forecasting of economic time-series**

The article combines a statistical extrapolation method based on a spectral analysis of time series and a new forecasting method utilising non-metric, non-exact and non-complete expert information on alternatives' probabilities in order to obtain more reliable estimates. The combined method proposed is approved by the forecasting of Russian corporate bonds market's indices.

*Konyuhovskiy P. V., Podkorytova O. A.*

### **The long-run dependence in exchange courses**

This study provides empirical evidence of the long-run dependence in the returns and volatility of rouble exchange courses. The measures of long-term persistence employed are the modified rescaled range statistics (R/S) proposed by Lo (1991) and the KPSS test. Significant long-run memory is conclusively demonstrated in the volatility measures, while there is a little evidence for the presence of long-run memory in the returns themselves.

*Mardas A. N.*

### **The econometric approaches to setting balanced scorecards**

The paper is devoted to the description of approaches to a choice of strategic plan measures on the base of econometric models. Procedures for quantification of a situation verbal analysis and for setting balanced scorecards are proposed.

*Vorontsovskiy A. V.*

### **Immunitization of a portfolio of bonds under a condition of an unparalleled shift in interest rate curves**

The article is devoted to the exploration of the methods providing the protection of a portfolio of bonds from the risk of changes in the future interest rates. It is supposed that interest rates change independently from each other in time. Non-plane curves of the current interest rates are examined. An unparallel shift of the curves is taken into account. The ways of the protection of income from a portfolio of bonds in the given range of interest rates through a purchase of an additional portfolio of bonds are shown. The cost of the latter is interpreted as a payment for the protection from the risk of falling of incomes from an initial portfolio.

*Ermolenko K. Yu.*

### **Business valuation on the basis of a method of market multipliers in a combination with a randomization approach**

The approach to an improvement of one of the most known methods of business valuation — a method of market multipliers — is presented in the work. In the framework of the basic idea of the method mentioned the model of company valuation is constructed. This method allows considering the additional non-numerical information on the performance of analogous companies. The proposed model is based on the principle of randomization of a choice of corresponding weight factors.

*Korosteleva M. V.*

### **A sensitivity analysis as a method of making investment decisions in a case of risk**

This paper is devoted to the examination of an application of a sensitivity analysis for the estimation of the investment risk. The simulation approach is briefly outlined; an analytical approach is presented in detail. The author briefly describes who to analyze sensitivity of net present value to the different factors. The analysis of sensitivity of internal rate of return to such factors as the project life, a cash flow, and a rate of changes of components composing a cash flow is examined.

*Parfenova V. E.*

### **An objective model of a program selection ensuring higher economic effectiveness**

In the article, a normative approach to system evaluation of ultimate results is developed. An objective model of a program selection is proposed, which would ensure an achievement or the closest approach to set goals, when budget is limited.

*Tutukin V. K.*

### **Minimization of the production cycle in robot modules**

This article is dedicated to robot modules representing one of the types of robot complexes. The classification, characteristics and examples of all their types are given. We prove for such a type of robot technological modules as “robot-unit of technologic equipment” that is expedient to have in front of the machine an additional device having the capacity for two pieces, not one.

*Tubina A. L., Brusser P. A., Soloviova M. Yu.*

### **The implementation of the cooperative game theory for modeling projects of private-public partnership**

The article is devoted to the implementation of the cooperative game theory for modeling projects of private-public partnership. The institute of private-public partnership opens large opportunities for financing social projects implemented by the government. The main object of the investigation is a coalition of players. The projects are analyzed with relation to profit gaining by each of the participators. It is assumed that the profit distribution between the coalition members is described by a characteristic function. The approach to its constructing is presented. One of the major directions of research is the search of stable solutions belonging to game cores.

*Kepke K. M., Naletova A. S.*

### **An application of methods of the cooperative game theory in research of the market of St. Petersburg's logistical services**

The authors investigate a relationship between logistical companies, expenses for construction of a warehouse complex, and a demand of logistical operators in terms of the theory of cooperative games. The problem of calculation of efficiency of associated logistical companies is mathematically modeled in terms of the theory of the expenses distribution; a number of approaches to its solution is examined.

*Volgin V. V.*

### **The selection of an optimal portfolio of capital investment projects**

There exists the voluminous literature on the project selection problem casting light upon approaches to the selection of an investment portfolio that is optimal from the standpoint of strategic goals of a company. The most popular and practice-oriented one of them is the Common Parameter Method (CPM). In this paper, the CPM-based algorithm is applied to the analysis of the project of the construction of the logistics terminals network.

## CONTENTS

Application of mathematical methods in economics — <i>Kolesov D. N.</i> .....	3
<b>◆ Macroeconomic modelling</b>	
<i>Borisov K. Yu., Fadeev V. Yu.</i> Endogenous economic growth under globalization: an approach to modeling .....	7
<i>Kalinichenko V. V., Surovchov L. K., Shalabin G. V.</i> The analysis of economic growth in Russia using a dynamic multisectoral Neumann model .....	13
<i>Gilenko E. V.</i> Moonlighting behaviour: peculiarities of theoretical modelling .....	26
<b>◆ Stochastic models of decision making</b>	
<i>Vavilov S. A., Ermolenko K. Yu.</i> The generalized problem of stochastic control of an investment portfolio .....	36
<i>Vasenev Yu. B., Dementev I. A., Mikhaylov M. V.</i> One of the approaches to describing and evaluating the basic work process and a performance index of the university quality system.....	47
<i>Kolesnikov G. I., Hovanov N. V., Yudaeva M. S.</i> Applying a quantification method of non-numerical probability estimation for an optimal selection of securities portfolio.....	58
<i>Mikhaylov M. V.</i> The ASPID-methodology as a measure for quality evaluation of the training in higher education .....	69
<i>Hovanov N. V.</i> A simple exchange model: additive and multiplicative indices of value in exchange .....	83
<b>◆ Econometrics</b>	
<i>Kolesov D. N., Kotov N. V., Fedorenko A. S.</i> The combination of statistical information and expert appraisal for the forecasting of economic time-series .....	93
<i>Konyuhovskiy P. V., Podkorytova O. A.</i> The long-run dependence in exchange courses .....	102
<i>Mardas A. N.</i> The econometric approaches to setting balanced scorecards .....	110
<b>◆ Modelling the investment and production</b>	
<i>Vorontsovskiy A. V.</i> Immunization of a portfolio of bonds under a condition of an unparalleled shift in interest rate curves.....	119
<i>Ermolenko K. Yu.</i> Business valuation on the basis of a method of market multipliers in a combination with a randomization approach.....	130
<i>Korosteleva M. V.</i> A sensitivity analysis as a method of making investment decisions in a case of risk.....	145
<i>Parfenova V. E.</i> An objective model of a program selection ensuring higher economic effectiveness.....	153
<i>Tutukin V. K.</i> Minimization of the production cycle in robot modules .....	159
<b>◆ Application of the cooperative game theory</b>	
<i>Tubina A. L., Brusser P. A., Soloviova M. Yu.</i> The implementation of the cooperative game theory for modeling projects of private-public partnership .....	170

<i>Kepke K. M., Naletova A. S.</i> An application of methods of the cooperative game theory in research of the market of St. Petersburg's logistical services .....	181
<b>◆ Brief Scientific Notes</b>	
<i>Volgin V. V.</i> The selection of an optimal portfolio of capital investment projects .....	189
Annotations .....	194