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Founder: LLC “Economic Sciences”
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ECONOMIC THEORY

«RUSSIAN AMERICA» PROJECT FAILURE AND THE DEPENDENCE OF THE SETTLEMENT ACTIVITY OF THE RUSSIAN COLONIAL FUR BUSINESS ON THE FORM OF OWNERSHIP

© 2021 Lebedev Konstantin Nikolaevich
Doctor of Economics, professor of the Department of economic theory, Moscow, Russia
Financial University under the Government of the Russian Federation
E-mail: KNLebedev@fa.ru

In this article, the author’s attempt to reconstruct the territory of Russian America is made, as well as the process of settlement expansion of the Russian fur business in North America, if the latter had not been merged into a monopoly joint-stock Russian-American fur company in 1799, and the movement of permanent Russian settlements in North America continued to the east and south along the northwest coast at the same speed with which it moved east from Kamchatka to 1799 inclusive. It is shown that in this case, the implementation of the project of the tsarist government «Russian America» could be completed in 1818.

Keywords: Russian America, Russian-American company, form of ownership, settlement expansion.

THE FAILURE OF «RUSSIAN AMERICA» PROJECT AND THE PURSUIT OF PROFIT OF RUSSIAN-AMERICAN COMPANY

© 2021 Budovich Yuliya Ivanovna
Doctor of Economics, professor of the Department of economic theory
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: JBudovich@fa.ru

© 2021 Budovich Margarita Sergeevna
Ph. D., associate professor of the Department of economic theory
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: MSBudovich@fa.ru

This article proves that the stop of the settlement expansion of the Russian fur business on the territory of Russian America after its reorganization into the monopoly Russian-American fur company in 1799, which is why the project of the tsarist government «Russian America» was failed, occurred for a reason of extremely weak desire of the company for such expansion, it is shown that the desire for settlement expansion of a fur colonial company established in the form of a joint-stock company, which was the Russian-American company, is blocked by a number of its inherent symptoms of such a disease of managing enterprises with a financial form of ownership, such as the pursuit of profit.

Keywords: Russian America, Russian-American company, financial form of ownership, settlement expansion, management diseases, pursuit of profit.
ECONOMIC AND POLITICAL COMPETITORS OF RUSSIA IN RUSSIAN AMERICA IN THE INITIAL PERIOD OF ACTIVITY OF RUSSIAN-AMERICAN COMPANY (1799–1818) AND THE REALITY OF THE COMPLETION OF «RUSSIAN AMERICA» PROJECT IN 1818

© 2021 Budovich Yuliya Ivanovna
Doctor of Economics, professor of the Department of economic theory
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: JBudovich@fa.ru

© 2021 Budovich Margarita Sergeevna
Ph. D., Associate professor of the Department of economic theory
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: MSBudovich@fa.ru

The article proves that during the period that was necessary for Russian private fur companies and partnerships to populate the territory of Russian America remaining unsettled by Russians, namely 1799–1818, which could have happened if the Russian fur business in North America had not been merged into the monopoly Russian-American company in 1799, there were exceptionally favorable conditions both for the occupation by Russian fur companies of the territory of Russian America — from the point of view of competition from the Anglo-American fur companies, and the official accession of the corresponding lands to Russia — from the point of view of the attitude of its territorial competitors in North America to the right of accession to the countries of lands unoccupied by Europeans by the right of first settlement.

Keywords: Russian America, Russian-American company, non-financial form of ownership, settlement activity, settlement expansion.


© 2021 Lebedev Konstantin Nikolaevich
Doctor of Economics, professor of the Department of economic theory
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: KNLebedev@fa.ru

In this article attempt to estimate approximately the cost of settling the remaining part of the territory of Russian America that was not inhabited by Russians by the beginning of the XIX century is made by such articles as the construction of settlements and the creation of a fleet, as well as to calculate approximately Russian-American company’s losses in the initial period of its activity (1799–1818) due to bad management. It is concluded that the lack of funds caused by these losses can serve as an explanation for stopping the settlement expansion of the Russian fur business in North America after its reorganization into a monopoly joint-stock company in 1799.

Keywords: Russian-American company, «Russian America» project, joint-stock company, bad management, management diseases.
ECONOMICS AND MANAGEMENT OF NATIONAL ECONOMY

MODERN MICROELECTRONIC TECHNOLOGIES AS A CONDITION FOR MANAGING THE STRUCTURAL TRANSFORMATION OF THE ECONOMY

© 2021 Zeldner Alexey Grigorievich
Doctor of Economics, Professor
Institute of Economics RAS, Moscow, Russia

The article deals with the problems of structural reconstruction of the economy based on innovative technologies, which are based on microelectronics. In this regard, the state of this branch of the economy in Russia is revealed, the relationship between the level of development of microelectronics and the volume of financing of the industry is shown, proposals are made to improve the management of the development of this industry, which is key for the structural modernization of the industry.

Keywords: innovation, microelectronics, labor productivity, import substitution, restructuring.

THE PARTICIPATION OF NONPROFIT ORGANIZATIONS IN SOLVING SOCIAL PROBLEMS OF RUSSIAN SOCIETY

© 2021 Azamatova Guljan Kamilevna
Candidate of Historical Sciences,
Associate Professor of the Department of Theory and Technology of Social Work
Kabardino-Balkarian State University named after H. M. Berbekov, Nalchik, Russia
E-mail: azagulya2007@mail.ru

© 2021 Vindizheva Albina Olegovna
Candidate of Sociological Sciences,
Associate Professor of the Department of Theory and Technology of Social Work
Kabardino-Balkarian State University named after H. M. Berbekov, Nalchik, Russia
E-mail: vindig1980@mail.ru

© 2021 Zakhokhova Madina Ruslanovna
Candidate of Economic Sciences,
Associate Professor of the Department of Organization of Work with Youth
Kabardino-Balkarian State University named after H. M. Berbekov, Nalchik, Russia
E-mail: madia_rz@mail.ru

The issue of the formation and development of non-profit organizations in Russia and foreign countries has been the subject of research both in domestic and world science for many years and has been of interest to this day. Russian society has already formed an understanding of the need to actively involve civil society actors in solving social problems. This fact is proved by the results of all-Russian public opinion polls conducted as part of the monitoring of the state of civil society at the Higher School of Economics. The survey was conducted by the Center for Civil Society and Non-Profit Sector Research. However, before the start of the pandemic in 2019, residents of Russia generally gave a satisfactory assessment of the contribution of public, non-profit organizations, initiatives to solving social problems in our country, and negative assessments almost tripled. At the present time, when many people have felt the help from NGOs and volunteers, there is a chance that ordinary Russians will more clearly see the role of NGOs in solving social problems, a reassessment will take place and the activities of NGOs will receive greater recognition from citizens. Before the crisis associated with the new coronavirus infection, as well as during all the years of monitoring, most of the Russian respondents believed that public, non-profit organizations and initiatives should, along with government institutions, participate in solving social problems in education, healthcare, culture, etc. etc.

Keywords: non-profit organizations, social policy, public-state partnership, healthcare, social services.
ANALYSIS AND MODELING OF THE CRIME SITUATION IN THE IRKUTSK REGION

© 2021 Aksenyushkina Elena Vladimirovna
Candidate of Physical and Mathematical Sciences, Associate Professor
Baikal State University, Irkutsk, Russia
E-mail: aks.ev@mail.ru

© 2021 Mamonova Natalia Vyacheslavovna
Candidate of Physical and Mathematical Sciences, Associate Professor
Baikal State University, Irkutsk, Russia
E-mail: naamm@mail.ru

The state of the economy as a whole has a strong impact on the crime situation in the region, and as a consequence in the country, which indicates that the study of the crime rate, namely its analysis and modeling, is one of the most important and promising approaches in socio-economic research. Such studies open up great opportunities for building an optimal strategy for the development of regions in order to improve the crime situation in the country as a whole, since with the help of correlation analysis it is possible to single out socio-economic factors affecting the dynamics of crime in the Irkutsk region. Moreover, these factors make it possible to consider the crime of the region through the prism of the socio-economic situation. On the other hand, to predict the crime situation, time series analysis is used, which is used to determine the structure of the time series. The presented approach to the study of the level of crime makes it possible to develop a socio-economic policy for the development of the region in order to improve the crime situation in the region and, as a consequence, improve the quality of life of the population. The presented algorithm has a fairly wide application, which means that it can allow a change in the model to any set of factors, which is an indisputable advantage over other approaches in research. Thus, having received levers of influence on the objects of study of interest to us, the research opened the possibility, by varying the factors studied, to propose a policy for the development of the region that would reduce the crime rate and thereby increase the quality of life of the population.

Keywords: crime rate, crime dynamics, analysis, econometric research, modeling, factors.

CONCEPTUAL FEATURES OF THE DEVELOPING HR MANAGEMENT STRATEGY PROCESS AS A KEY FUNCTIONAL STRATEGY OF THE ORGANIZATION

© 2021 Aleksandrov Igor Nikolaevich
PhD (Econ), Associate professor
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Gridneva Maria Alekseevna
PhD (Econ), Associate professor

© 2021 Petrov Maxim Aleksandrovich
PhD (Social Sciences), Associate professor

© 2021 Molodkova Eleonora Borisovna
PhD (Social Sciences), Associate professor
Saint Petersburg State University of Economics, St. Petersburg, Russia

This article analyzes the conceptual features of the process of developing a personnel management strategy as a key functional strategy of the organization. The basic conditions for the formation of HR strategy in the context of dominant organizational relations, as well as the factors that determine its distinctive features, have been determined. Comparative analysis of the basic competitive strategies of the
organization made it possible to determine the main directions of the process of developing a strategy for personnel management, taking into account conceptual approaches, factors of the external and internal environment of the organization. The author’s vision of the process of forming a strategy for personnel management in international companies in the context of globalization and increased international competition is formulated. It is concluded that it is advisable to use a combined strategy in such conditions.

**Keywords:** strategic human resource management, HR strategy, HR strategy development process, overarching HR strategies, specific HR strategies.

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**ANALYTICAL REVIEW OF THE STATE AND DEVELOPMENT TRENDS OF THE ROCKET AND SPACE INDUSTRY IN RUSSIA**

© 2021 Afanaseva Elizaveta Aleksandrovna
Postgraduate student of the department of economic management
Orenburg State University, Orenburg, Russia
E-mail: afanasjeva.elisabeta@yandex.ru

© 2021 Chmischenko Elena Georgievna
Doctor of Science (Economics), Professor, Professor of Economic Management Department
Orenburg State University, Orenburg, Russia
E-mail: elench2@yandex.ru

The relevance of the research is due to the fact that the rocket and space industry (RSI) of Russia belongs to the high-tech sector of the economy, and the identification of the main trends in its development opens up the prospect of economic growth. The main indicators of the Russian rocket and space industry and new tendencies of its development are the subject of the research. The purpose is to estimate the current state of Russian rocket and space industry and the main tendencies of its development. The sources of information are Russian and foreign scientific publications. Research methods: analysis, synthesis,
comparison, ranking, generalization, abstraction, concretization, systematization, formalization, graphic, statistical-economic and monographic methods. The novelty consists in obtaining new data on the state and trends in the development of (RSI) in Russia. The main results: the current state of Russian (RSI) has been defined; the tendencies of development of the Russian market of space products have been revealed; the ways to improve the state of the industry have been determined. The results have a theoretical and applied orientation and can be used both in the management of the industry and in the educational process of specialized departments and universities in Russia. The conclusion is made about the causes of the crisis situation of the domestic enterprises of (RSI), which allowed to determine the directions of improving the efficiency of the industry, taking into account the identified development trends.

Keywords: defense-industrial complex, Roscosmos, world space market, private cosmonautics, launch industry, space equipment, problems of Russian space industry, development trends.

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MECHANISM OF THE BUSINESS MODEL DEVELOPMENT FOR A SERVICE COMPANY PROVIDING MAINTENANCE OF RADIO NAVIGATION EQUIPMENT

© 2021 Voronova Olga Vladimirovna
Candidate of Economic Sciences, Associate professor
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Khnykina Tatyana Semenovna
Candidate of Economic Sciences, Associate professor
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Ilyina Irina Vitalyevna
Assistant lecturer
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Orlova Valeria Igorevna
Postgraduate
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

This paper discusses the mechanism for building a business model of a service company providing maintenance of radio navigation equipment according to the method of A. Ostervalder and I. Pignet. In the course of the research, the authors carry out the analysis of the operating service companies in the area of radio navigation equipment on ships or water transport, and consider the features of the territorial location of the business, types of services provided in the market, as well as the nature of legal regulation and factors that negatively affect the performance of the companies. What is more, the paper focuses on the main stages of building a business model separately for each of the nine key indicators. Using the methodological approach proposed by A. Ostervalder and I. Pignet and a review of the market for similar services, the study presents a business model of service companies for the maintenance of the radio navigation equipment, taking into account the specifics of the given market.

Keywords: business model, modeling, key resources, value proposition, distribution channels, customer segments, services, radio navigation equipment.

OPTIMIZATION OF THE MODEL FOR THE PUBLIC SERVICES PROVISION IN CADAstral REGISTRATION BASED ON AUTOMATION OF CADAstral REGISTRATION PROCESS

© 2021 Voronova Olga Vladimirovna
Candidate of Economic Sciences, Associate professor
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Khnykina Tatyana Semenovna
Candidate of Economic Sciences, Associate professor
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Ilyina Irina Vitalyevna
Assistant lecturer
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

© 2021 Sadakova Viktoria Vladimirovna
Senior specialist in “FKP Rosreestr”
The paper provides a model for optimizing the provision of public services in cadastral registration, based on the automation of cadastral registration and other registration activities. In the course of the study, the quality of the public services provision in the field of cadastral registration was assessed. In order to provide a comprehensive research framework, the paper focuses on the core, managing and supporting business processes and carries out the analysis of their key performance indicators. In the course of the study, such problematic aspects as speed and quality of services provided by cadastral registration enterprises were assessed, together with convenience of the services offered for potential applicants. A problem of the lacking single resource uniting the spatial data between all departments was also discussed.

As a result of the analysis, the paper highlights such potentially promising business processes for reengineering as «Simplification of interface for interaction between applicants with the Kirov Cadastral Chamber» and «Automation of cadastral registration and registration activities». For the identified processes, target models, key performance indicators, as well as roadmaps were developed with a goal to display a step-by-step scenario for the development of an organization in a given direction up to 01.01.2023.

Keywords: business processes, business model, reengineering, target model.

ASSESSMENT OF THE INVESTMENT ATTRACTIVENESS OF DIGITAL TECHNOLOGIES IN THE RAILWAY INDUSTRY

© 2021 Guliy Ilia Mikhailovich
PhD in Economics, Associate Professor
Emperor Alexander I St. Petersburg State Transport University, St. Petersburg, Russia
E-mail: ilya.guliy@mail.ru

Statistical trends of investment in digital technologies by modes of transport in Russia are shown. The outpacing dynamics of investments in digital technologies in comparison with the general macroeconomic dynamics is noted. Possible methodological approaches to the economic assessment of investments in digital technologies are systematized. The hypothesis of investment attractiveness, significant economic efficiency of digitalization based on the analysis of best practices in the implementation of projects by railway companies in the world has been verified.

Keywords: investments in digital technologies, investment attractiveness, digital investments, digital model, digitalization of railway transport.

References
INDUSTRIAL POLICY OF THE REPUBLIC OF ARMENIA IN THE CONTEXT OF RELATIONS WITH THE EU AND THE EAEU

© 2021 Danielyan Artur Aikazovich
Applicant, Economics and Management of Enterprises and Industrial Complexes Department
St. Petersburg State University of Economics, St. Petersburg, Russia
E-mail: Arthur_d@inbox.ru

The article deals with the issues of integration of the Republic of Armenia into international economic unions. The characteristics of the Armenian industry are given and the comparative advantages and disadvantages of the integration of the Armenian economy into the European Union and the Eurasian Economic Union are shown.

Keywords: Armenia, integration, industry, industrial policy

CONCEPTUAL APPROACHES TO THE FORMATION OF AN ORGANIZATIONAL AND ECONOMIC MECHANISM FOR ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN THE NATIONAL AGRO-FOOD SYSTEM

© 2021 Dovgotko Natalya Anatolyevna
Candidate of Sciences (Economics), Associate Professor
Stavropol State Agrarian University, Stavropol, Russia
Leading Researcher
Pyatigorsk State University, Pyatigorsk, Russia

© 2021 Cherednichenko Olga Aleksandrovna
Candidate of Sciences (Economics), Associate Professor
Stavropol State Agrarian University, Stavropol, Russia

The main prerequisites, factors, trends and priority areas of formation of the organizational and economic mechanism for achieving sustainable development goals (SDGs) in the Russian agro-food system in accordance with the goals and objectives of the Global Agenda to 2030 (Agenda 2030), the FAO food security principles and conditions of national economic development were identified. A conceptual version of such a mechanism has been elaborated, its basic levels, structural subsystems, methods of achieving the SDGs have been identified, taking into account the need for their integration into the system of strategic planning and government programs for the development of the agro-food sector of the economy. It is proposed to distinguish economic, organizational, social and natural-climatic subsystems and their corresponding tools for achieving the SDGs and coordinating sustainable development policies in the Russian agro-food system.

Keywords: institutional and economic framework, Agenda 2030, sustainable development, sustainable development goals, agro-food system, agriculture, food security.
ECONOMIC SECURITY POLICY AS A NECESSARY ELEMENT OF THE EFFECTIVE FUNCTIONING OF MODERN COMPANIES

© 2021 Dubolazova Yulia Andreevna
Candidate of Economic Sciences, Associate Professor of the Higher School of Engineering and Economics
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
E-mail: dubolazova_yau@spbstu.ru

© 2021 Yachmeneva Ekaterina Dmitrievna
Student, Higher School of Engineering and Economics
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
E-mail: katja-jachmeneva0@mail.ru

The article is devoted to the study of theoretical and methodological issues of economic security policy. The purpose of this publication is to detail and further systematize approaches to clarifying the essence of the concept of «economic security policy of modern companies.» Within the framework of this article, the basic recommendations necessary for the formation of an effective policy of economic security of an economic entity are summarized.

Keywords: economic security, business entity, economic security policy, functions, set of measures, efficiency, management, requirements, recommendations.

THE ESSENCE OF THE CONCEPT OF «HUMAN CAPITAL» IN RELATION TO A HIGHER EDUCATIONAL INSTITUTION

© 2021 Zotova Elizaveta Aleksandrovna
Graduate School of Industrial Management
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
E-mail: zotova@spbstu.ru

To date, the process of digital transformation of the world economy has determined the totality of qualitative changes in almost all aspects of human life. The sphere of higher education has undergone a significant transformation. This statement is primarily manifested in the reduction of barriers to professional interaction, which in turn significantly increases the variability of the formation of research teams. It is research teams that serve as the basis for the formation of the human capital of an educational organization in the context of digital transformation. This article presents the results of a study to clarify the concept of «human capital» in relation to an educational organization in the context of digital transformation.

Keywords: human capital, educational organization, organization of higher education, synergy.

CONCEPTUAL DIRECTIONS OF THE INFLUENCE OF TECHNOLOGICAL DEVELOPMENT ON THE STATE OF THE EDUCATIONAL ENVIRONMENT OF A HIGHER EDUCATIONAL INSTITUTION

© 2021 Zotova Elizaveta Aleksandrovna
Graduate School of Industrial Management
Peter the Great St. Petersburg Polytechnic University (SPbPU), St. Petersburg, Russia
E-mail: zotova@spbstu.ru
The state of the educational environment as the basis for the formation of the human capital of an educational organization for the purposes of innovative development depends on technological progress (technological development), the international scientific situation and socio-economic factors. At the same time, the influence of the international scientific situation and socio-economic factors is extremely slow and conditionally constant, and technological progress affects strongly and quickly, which was proved by the rapid technological transformation caused by the COVID-19 pandemic. Accordingly, an important task is to understand and mathematically describe the process of the influence of technological progress (technological development) on the state of the educational environment, which ultimately results in the impact on each educational organization for the purpose of its innovative development. This article provides an overview of the main basis of research in the field of the influence of technological development on the state of the educational environment of a higher educational institution and a conceptual model of this influence is formed.

Keywords: technological development, educational environment, higher education institution, information environment.

ASSESSMENT OF THE FINANCIAL STABILITY OF TRADING COMPANIES WITHIN THE FRAMEWORK OF RUSSIAN-CHINESE COOPERATION

© 2021 Kim Natalia Arsenievna
Graduate school of industrial economics
Peter the Great St. Petersburg Polytechnic University (SPbPU), St. Petersburg, Russia
E-mail: kim_na@spbstu.ru

© 2021 Konnikov Evgenii Aleksandrovich
Candidate of Economic Science, Graduate school of industrial economics
Peter the Great St. Petersburg Polytechnic University (SPbPU), St. Petersburg, Russia
E-mail: konnikov.evgeniy@gmail.com

The article focuses on the study of tools and approaches to determining the financial stability of trading companies in the framework of Russian-Chinese cooperation. The relevance of this topic is expressed in the fact that today, due to many factors of the external environment, it is problematic for enterprises to ensure their financial stability. The purpose of this type of research is to form an effective model for assessing the financial stability of trade enterprises in the framework of Russian-Chinese cooperation. Applying the existing models for assessing the financial stability of companies to Russian-Chinese enterprises, we can conclude that these models do not take into account environmental factors and they are ineffective in relation to the enterprises studied in the work. As a result, it was concluded that it is necessary to create their own model of financial stability of these enterprises, taking into account external factors that reflect the real financial stability of enterprises.

Keywords: financial stability, Russian-Chinese cooperation, assessment of financial stability, trading companies, financial sustainability models.
TAXONOMY OF APPROACHES TO STRATEGY FORMATION: SIGNIFICANCE FOR BUSINESS THEORY AND UNDERSTANDING OF MARKETING IN THE ACTIVITIES OF ENTERPRISES

© 2021 Krasyuk Irina Anatolyevna
Doctor of Economics, Professor, Higher School of Service and Trade
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
E-mail: krasyuk_ia.@spbstu.ru

© 2021 Pasholikov Maxim Aleksandrovich
Candidate of Economic Sciences, Associate Professor, Higher School of Engineering and Economics
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia
E-mail: vicerector.dm@spbstu.ru

In modern conditions, the issues of marketing management are being updated, the theory and methodology of which is based on the marketing construct of managerial activity. The marketing orientation of industrial enterprises is determined by the interests of consumers of industrial business, the consistency of marketing actions leads to an increase in sales volumes. The marketing partnership of industrial enterprises contributes to the further development of marketing strategies, the achievement of marketing goals and the optimization of marketing resources to increase the market segment of industrial business. The purpose of the study is to determine the possibilities of integration between the schools of management and marketing. To achieve this goal, the systematization of marketing strategies in the B2B market was carried out. According to the results of the study, the key characteristics of marketing interaction were determined.

Keywords: marketing strategies, B2B market, marketing management, management schools, business models.

ASSESSMENT AND SELECTION RISKS OF TRADE ENTREPRENEURSHIP UNDER CONDITIONS OF INCREASED UNCERTAINTY AND ECONOMIC INSTABILITY

© 2021 Kunin Vladimir Aleksandrovich
Doctor of Economics, Associated Professor
Saint Petersburg university of management and economics, Saint Petersburg, Russia

© 2021 Mikhailovsky Dmitry Aleksandrovich
Graduate student
Saint Petersburg university of management and economics, Saint Petersburg, Russia
CCO (chief commercial officer) at ZAO Alyans-GROUPP (Alyans-GROUPP, CJSC)

This paper systematizes methods and indicators of entrepreneurial risk assessment. In relation to trade entrepreneurship, it confirms the necessity to apply problem-oriented methods of risk assessment, taking into account the sectoral specifics of any type of entrepreneurial activities. The method of 3D risk separation is proposed, intended for the selection of individual risks of trade entrepreneurial structures from the point of view of adequacy of potential risk management on the basis of price loss balancing. It is proposed to evaluate the risks of trade entrepreneurial structures by a three-component risk vector, the components of which are the probability of risk realization, damage from its realization and the significance of the risk, characterizing a relative change in customer loyalty under the influence of the risk assessed. The paper gives practical recommendations how to determine criteria for 3D separation of risks based on the use of their three-component vectors for trade entrepreneurial structures of different scales. It gives the evaluation of impact of strategic risks of lower revenue and increased overall costs on key performance and business performance indicators. Confidence limits of change in profit and profitability under the
influence of individual risks in the current conditions of uncertainty and economic instability are assessed. The impact of scale and profitability of entrepreneurial structures on the severity of consequences from the impact of strategic risks is investigated and evaluated in this paper.

*Keywords: risk, uncertainty, business structure, valuation, efficiency.*

**FORMATION OF A HUMAN CAPITAL MANAGEMENT SYSTEM AS ONE OF THE MOST IMPORTANT CONDITIONS FOR SUSTAINABLE DEVELOPMENT OF THE REGIONAL ECONOMY**

© 2021 Melnikov Pavel Vladimirovich
 Applicant for the Higher School of Engineering and Economics  
Peter the Great St. Petersburg Polytechnic University, St. Petersburg, Russia

Human capital is a priority area for the development of entrepreneurial activity at the regional and state level. Poor management of human resources blocks any sustainable development of the territory. The purpose of this article is to identify the principles of forming a human capital management system in the concept of sustainable development of the regional economy. In particular, the author has systematized approaches to the definition of human capital, analyzed the management models of this economic category and made recommendations on the main provisions within which the human capital management mechanism should be formed.

**AN AUTOMATED ALGORITHM FOR THE RESEARCH TEAM REPRESENTATIVE PROFESSIONAL DEVELOPMENT REGION QUANTIFICATION FOR THE PURPOSE OF MULTICULTURALISM COEFFICIENT CALCULATION**

© 2021 Rodionov Dmitry Grigorievich  
Graduate school of economics and technologies, Doctor of Economic Sciences, Professor  
Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia, St. Petersburg  
E-mail: dmitry.rodionov@spbstu.ru

© 2021 Zotova Elizaveta Aleksandrovna  
Graduate School of Industrial Management  
Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia, St. Petersburg  
E-mail: zotova@spbstu.ru

© 2021 Konnikov Evgenii Aleksandrovich  
Candidate of Economic Science, Graduate school of industrial economics  
Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia, St. Petersburg  
E-mail: konnikov.evgeniy@gmail.com

Under the influence of the digital transformation process, the sphere of higher education has undergone significant qualitative changes. These changes have led to a significant increase in the importance of the process of managing the human capital of an educational organization. As part of previous studies, the authors developed a tool for calculating the level of multiculturalism of a research team, for the purposes of managing the human capital of a higher educational institution in the interests of innovative development. Within the framework of this article, a universal automated tool for quantification of the most probable value of the region of professional development of a representative of a research team is presented for the purpose of calculating the coefficient of multiculturalism.

*Keywords: human capital, multiculturalism, research team, higher education institution, innovative development, parsing, quantification of natural information.*
PROSPECTS FOR THE IMPLEMENTATION OF THE CONCEPT OF RELATIONSHIP MARKETING IN INDUSTRIAL MARKETS

© 2021 Semenova Svetlana Viktorovna
Department of management and marketing, applicant
Belgorod National Research University, Belgorod, Russia
E-mail semenova_sv@mail.ru

This article reveals the issues of the implementation of strategic and tactical tasks related to the opportunities that marketing provides for an industrial company. The relevance of applying the concept of relationship marketing in the business practice of industrial enterprises is due to the need to ensure their effective development in the new conditions of globalization, tougher competition, acceleration of scientific and technological progress, changes in the requirements and behavior of consumer organizations, a decrease in the effectiveness of traditional marketing approaches, an increase in public expectations regarding the qualitative impact of each enterprise on the formation of a stable overall economic development of the state. Since industrial figures develop relationships with partners (customers, suppliers, intermediaries) more than they act in the market, they should be ready to invest in the development and maintenance of these partnerships using relationship marketing tools.

Keywords: industrial marketing, marketing communications, interaction marketing, b2b market, partnerships, competition, client-centricity.

ORGANIZATIONAL AND ECONOMIC BASIS FOR STRENGTHENING THE ONCOLOGICAL SERVICE IN RUSSIA

© 2021 Sibilev Dmitry Vladimirovich
Postgraduate student
Institute of Public Service and Management and Administration
Russian Academy of National Economy and Public Administration under the President of the Russian Federation (RANEPA), Moscow, Russia
E-mail: sdmitry2002@gmail.com

© 2021 Panova Tatiana Vladimirovna
PhD in Economics
Dean of the Faculty of International Regional Studies and Regional Management
Institute of Public Service and Management and Administration
Russian Academy of National Economy and Public Administration under the President of the Russian Federation (RANEPA), Moscow, Russia
E-mail: tv.panova@igsu.ru

Treatment of oncological diseases is a topical problem of Healthcare organisation not only in Russia but worldwide as well. Top priority programme of healthcare development is aimed at increasing of diagnostics at early stage and decreasing of mortality caused by oncological diseases. For this reason a special attention is paid to financing of oncological service.

Keywords: tumours, diagnostics, mortality, expenditures, national project

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1. Order of the Ministry of Health of Russia (Ministry of Health of the Russian Federation) of February 19, 2021 No. 116n «On approval of the Procedure for providing medical care to the adult population with cancer»;
The article provides a definition of a business process and its components, reflects the need not only to describe the company’s activities by a system of interrelated business processes, but also the importance of a qualitative transformation of processes through reengineering. The definition of reengineering, which is the object of research, and the definition of the logistic system, which is the subject of research, are given. The relevance of the topic lies in the departure from the general approach for all economic systems to the reengineering process and highlighting the features of application to logistics business processes. The article describes the features of the application of the reengineering process to logistics systems, taking into account their differences from other economic systems. The logistic systems at three levels are considered in detail: macrologistic systems, mesologistic systems and micrologistic systems. Also, the features of the reengineering process associated with the reengineering of business processes in various functional areas of logistics are separately highlighted: procurement logistics, warehouse management, inventory logistics, transport logistics, production logistics, distribution logistics and information logistics.

Keywords: Logistic business process, reengineering, logistics system.
The article discusses the process of developing logistics business processes in e-commerce. The prerequisites for the digitalization of logistics are assessed and the factors for the accelerated growth of this sector of the economy are given. The conditions of logistic business processes for the success of e-commerce are listed. The article deals with the reduction of costs in logistics business processes, which can be achieved by the development of e-commerce. It also lists the principles that need to be considered when building logistics business processes in e-commerce.

*Keywords: Logistic business process, logistics, logistics in e-commerce, digitalization of logistics.*

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**TECHNOLOGICAL ENTREPRENEURSHIP IN RUSSIA**

© 2021 Udaltsova N.L.

PhD in Economics, Associate Professor at the Department of Management and Innovation
Graduate School of Management
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: Udaltsova.nl@yandex.ru

The scientific article is devoted to the research analysis of the features of the modern development of innovative and technological entrepreneurship in Russia. The relevance of the study is due to the fact that, as part of the digital transformation of the Russian and international economy, an increasing number of business entities form business areas of technological production and the development of innovative projects aimed at creating unique products, innovations and information technologies. The article analyzes the trends in the development of technological entrepreneurship and innovation in the Russian economy. The most priority areas of business activity of technology and innovation-oriented enterprises are described. The most famous innovative companies and their products are analyzed. The features of the functioning of small innovative business in Russia are described. The current problems of large and small enterprises operating in the information technology sector (IT-sphere) are analyzed. The features and barriers in financing technological and innovative entrepreneurship in Russia are described.

*Keywords: technological entrepreneurship; innovative entrepreneurship; innovative activity; innovative technologies; innovative projects; startup projects; innovation; digital economy; digital transformation; innovative activity; production of information technology.*
WHY RETURN TO GOLD STANDARD IS NOT POSSIBLE

© 2021 Pushkarev Dmitry Vladimirovich
PhD in Economics
Lecturer, Department of Public Administration
Moscow State Institute of International Relations (University),
Ministry of Foreign Affairs of the Russian Federation, Moscow, Russia
E-mail: pdv_2003@mail.ru
ORCID ID: https://orcid.org/0000–0003–0862–7003

Obviously, the gold standard has long and forever gone down in history. This is reflected not only in the fact that the financial world is already different qualitatively — it is different quantitatively. All the gold in the world is not able to cover the current world gross product and the growing world production, stimulated by the growth of consumer demand. What is needed is modern money that meets all five of its functions at once.

The article reveals the functions and essence of modern money in the concept of ensuring the global exchange of goods, services and an intellectual product. Through the functions of money, a sufficient and necessary basis for the development of international cooperation and technical progress is provided.

Global technology corporations and financial institutions demonstrate the real scale of global economic exchange, which is not able to cover all the gold in the world. Nowadays, the turnover of financial and economic activities of such companies takes place in US dollars, and all these companies either appeared in the US, or their shares are traded in US dollars on American stock exchanges, performing the function of world money.

Using the example of India during the East India Company, the dramatic consequences for the economy of this country from the transformation of national income into treasures, the exchange of financial resources into gold and other precious metals are shown.

Many developed countries have long abandoned the idea of returning to the gold standard as a guarantee of the national currency. Some advanced economies, such as Canada, have completely abandoned the content of gold in their financial reserves.

As an example, the Canadian economy is cited, which for many years was largely resource-based and accumulated gold backing. This article shows the positive effect of investing gold reserves in knowledge-intensive spheres and educational services, which gave a new impetus to the development of Canadian society and diversification of the Canadian resource economy.

**Keyword:** gold standard, functions of money, world financial system.

INTRODUCTION

The essence and functions of money. The gold standard, or why gold money is no longer money

A Gold Standard is a monetary system in which the standard economic unit of account is based on a fixed quantity of gold (c) Wiki*

Recently, in countries with a low human development index, in developing countries, we hear more and more often about the imminent collapse of the dollar, about its artificial nature and that it is only necessary for courageous and independent countries to introduce something like a gold standard or gold backing, as the dollar itself does not itself will cease to be a world currency, and currencies developing on the contrary will flourish with a never-before-seen flowering and will replace the “green monopolist”.

In order to clearly show the inability of gold and gold backing of money today to serve the exchange of goods in open economies and to demonstrate the inability of closed economies to ensure the growth of the welfare of citizens, it is enough to consider the functions that modern money performs and draw the appropriate conclusions.

Let us recall the five main functions of money that distinguish modern money, serving country and international commodity exchange in the mod-

* https://en.wikipedia.org/wiki/Gold_standard
ern world, from «near-money» that had covered the economic and then financial relations of economic entities during the transition from a subsistence economy to a production one.

All five functions are necessary and sufficient attributes of the modern global means of payment — world money, which ensure financial stability throughout the world, sustainable economic growth and understandable financial and economic relations in the future:

1. — Measure of Value
2. — Means of Circulation
3. — Means of Payment: payment of wages, benefits, purchase of goods on credit
4. — Function of money as a Means of Accumulation and Savings
5. — World Money Function: international payments, currency exchange.

Chapter 1
A measure of the value of money: how much to hang in grams

We wanted to do the best or how the United States almost lost its gold reserves

The function of money as a measure of value creates an assessment of a good or service that is understandable for all participants in the exchange. It is in money that the objective and final price of the exchange is estimated. The measure of the value of money itself was previously considered to be their actual value — in kind, adopted by all subjects of exchange.

For example, the pound of silver in England later became the «British pound» — which later, at first, paper money, and now completely impersonal. And at first it was really — as much as a whole pound of silver!

At this stage of assessing the value of goods and services The Measure of the value of all goods was determined as a part of the universal means of payment accepted in certain territories or economic zones. The larger the territory of acceptance, the more universal the means of payment. Traditionally, items made of precious metals were accepted as such a universal Means of payment.

Later, gold, silver and copper money appeared, which is called real money. That is, their real value coincides with their nominal value and is equal to it. Thus, the value of a good or service was determined in the form of the amount of real monetary content, and money, in this case, was provided by its real value. Over time, under the influence of various socio-economic processes that influenced the change in the scale of prices, the valuation of goods and services moved away from the weight content of money, moving into the concept of nominal value.

To balance interstate prices in international trade, countries were forced to establish fixed price scales tied to the material content of the precious metal within the country. In other words, to understand how much the state can buy in total goods and services, or how much it itself produces and can realize prices on an international scale, it was enough to look into the treasury and see how much gold and silver there is. The weight content of the treasury was the state budget. The more gold and silver, the more the country’s budget and its financial capabilities in the issue of the national currency. This was the case until the middle of the 20th century.

At the time of the emergence of the Bretton Woods system in July 1944, when it was impossible to determine the real amount of money in states and their gold backing in the perspective of the imminent end of World War II, the only world currency in the world with gold content and providing real value with gold was the US dollar ... Thus, it was in the American dollar that the value of gold itself began to be estimated, and already through this ratio all other currencies were measured among themselves.

The gold price was firmly fixed at $ 35 per troy ounce. Thus, the United States, with its entire money supply, had to provide any amount of gold circulating in the markets and at the same time, it was obliged to give out exactly as much gold in exchange for the dollar as it was established in the ratio according to the Bretton Woods system — the same $ 35 per oz. No matter how many dollars were presented to the American Government for payment in gold, the United States had to give in exchange for dollars exactly the same amount of gold, based on the rate of $ 35 per ounce.

All of this worked great as long as the US had a significant lead in the amount of gold in the world. At the time of the Bretton Woods ratio, the United States had about 70% of all gold reserves in the world — find statistics and give a link. Of course, over time, gold reserves in other countries also increased, gold production increased, trade turnover between countries increased, and dollar reserves in the currency baskets of other countries grew.

* https://www.federalreservehistory.org/essays/gold-convertibility-ends
In just a few years, the emission of the dollar exceeded the actual content of American gold in vaults. The dollar could no longer support the growing financial market pegged to the gold dollar standard, and the US government could no longer guarantee that an adequate amount of its gold would be issued to other countries in exchange for its own dollar.

At some point, including under the influence of inflationary processes, the governments of other countries realized that it was more profitable to give away the nominally strong dollar, but actually devalued to gold, and take gold at the current tough exchange rate of $35, and the United States realized that so many dollars they do not need it, and gold in vaults is much more preferable at the established rate than the same $35 per ounce. It was necessary to change something until the States were completely left without gold with their dollars in hand.

So, in 1976, the Jamaican monetary system appeared, which operates to this day, when the exchange rate of currencies is established by the free international currency market, and is not provided by the gold reserves of any one state.

That is why, nowadays, we estimate the value of a commodity through the exchange rate value of money, and not through the reserves of gold in central banks. This is the real price for a service or product, expressed in money as a Measure of value. How much money should be given in exchange for a service or product.

It is important to understand that it is with money that the participants in the exchange (both the consumer and the manufacturer) in the current financial and economic relations assess the value of the goods. This is the most effective, honest and adequate assessment of the value of both individual goods and the entire manufactured product, as well as the turnover carried out within any economic and financial areas.

Moreover, the wider the field of exchange, for example, trade between countries, the more relevant this function becomes, since the need for the existence of a universal exchange unit, accepted unconditionally by all participants in the exchange, already on an international scale, increases. We will talk about the function of world money in a separate section.

Chapter 2

Money as a Means of Circulation in the Equation of Exchange

In commodity exchange, money plays a direct and one-time function, acting as a financial intermediary between the seller and the buyer. We can say that, although not always, but money is the necessary security for the transaction, which leads to the final exchange of buyer / seller when the goods receive a new owner.

Such an exchange can be done without money, but it is much more difficult and risky, both in terms of the risks of non-payment — in the case of promissory notes, and in terms of the loss of value in the future, either of the goods itself or a decrease in the exchange value of money — in this case, a mechanism, which is complex for many, is used futures contracts, which significantly reduces both the speed of circulation of money and the number of exchanged goods and services, which reduces demand, and this in turn leads to a decrease in production.

Thus, money, like goods and services, passes from buyers to sellers, and those, in turn, having received money for their goods, acquire another. This is the circulation of money. Along with the circulation of goods and services, money is also circulated, ensuring the exchange between economic entities, obeying the Law of Circulation expressed in the equation of exchange of I. Fisher:

$$MV = PQ,$$

where $M$ is the money supply;

$V$ — the velocity of money circulation in the movement of income;

$P$ — the level of commodity prices;

$Q$ — level of actual production (volume traded goods).\(^*\)

The equation describes the balance between circulating money and goods produced. The law of monetary circulation shows that with a change in the amount of money in circulation or the speed of circulation of money, the quantity of issued goods and their value change.

For example, with a reduction in the money supply and their velocity of circulation, prices for goods and services will decrease, production will fall, and vice versa — if the amount of money in the economy grows faster than the growth of the mass of commodities, this will lead to an increase in

\(^*\)The Purchasing Power of Money: Its determination and relation to credit, interest and crises, Irving Fisher, 1911
prices, which will create preconditions for inflation. By the way, moderate inflation stimulates production — the manufacturer strives to produce goods at the “old” (prices) costs and sell them at new (increased) prices, showing an increase in revenue on the balance sheet.

However, on a national scale, the financial authorities need to observe the principle of «necessary and sufficient» in order not to lose control over inflation in the pursuit of monetary stimulation of production. The money supply is determined by the equation: \( M = \frac{PQ}{V} \)

Money, as a Medium of Circulation, is of particular relevance in the course of commodity and raw materials exchange, when an increasing number of suppliers of components are included in the production chain. The more complex the product, the more the various manufacturers of its components are involved. It is the same on the part of the consumer: the more consumers are involved in commodity exchange, the more relevant the money turnover becomes. Thus, money continues to function as circulation today.

**Chapter 3**

**Means of Payment and transfer of money to the obligation**

Despite the indisputability of money as a Means of Circulation, with the development of credit relations, money acquires the function of a Means of Payment.

If, when money performs the function of a Medium of Circulation, money itself acts as an intermediary between the buyer and the seller according to the formula commodity-money-commodity, then performing the Function of Payment (Means of Payment), money helps to carry out a transaction with a deferral.

The overwhelming majority of the exchange of goods and services in developed economies occurs with deferred payment. One of the illustrative examples here is the payment of wages, when an employee receives money much later than he has completed his work. Money, as a Means of Payment, participates in the payment of taxes, benefits and other deferred payments.

In addition, a significant proportion of settlements in consumer and industrial financial relations are formalized as credit settlements. That is, unlike the Means of Circulation formula G-M-G (Goods-Money-Goods), where money is directly a link between the buyer and the seller, the Means of Payment formula adds such a concept as a liability to the chain of financial ties.

Before the manufacturer receives money for his product or service, he receives a certain obligation as a guarantee of payment in money in the future. In the case of wages, the employee has an employment contract, in the case of purchasing raw materials in a complex production chain, the supplier, before receiving payment in cash, receives a futures contract. When paying on credit or by installments, this is a loan agreement.

In any case, money, performing the Function of Payment through the mechanism of an obligation or a credit agreement, fixing a transaction, accelerates the exchange of goods. Calculations begin after a certain period of time according to the formula Goods-Obligation: Obligation-Money or G-O: O-M.

This function can be performed by both cash and non-cash. The appearance in the exchange chain of non-cash money and debt obligations significantly accelerates economic processes, gives additional energy to economic growth. Credit stimulates demand, and demand, in turn, stimulates production. In the article «Two necessary and sufficient factors for economic development of contemporary society», we talked about the phenomenon of a rapid recovery of market economies after an almost complete destruction — this is happening largely due to credit relations.

**Chapter 4**

**Function of money as a Means of Accumulation and Savings or how treasures destroy the economy**

The functions of money have their own financial consistency. So, when performing the function of Value Measures, money stimulates the appearance of payment delays, which in turn forms credit relations. And the function of money as a Means of Payment through the payment deferral mechanism releases part of the money from circulation, forming stocks and savings. This is how the function of money appeared as a Means of Accumulation and Savings.

A manufacturer, having received money for his product, does not always immediately put it into circulation by purchasing other goods; or raw materials for our own production. Part of the money goes out of circulation, forming temporarily free assets.

These assets have the greatest liquidity, as they continue to possess the previous three qualities (Measure of Value, Means of Circulation, Means of Payment). Still being the equivalent of the value, that is, the Measure, they can return to circu-
lation at any time, performing the function of the Payment instrument. However, money that is out of circulation, performing a reserve function, does not participate in the economic development of an economy or region.

In other words, despite the obvious advantages of reserving assets, this does not contribute to the growth of the well-being of the population, or to the growth of the state’s economy. Not a single world economy or firm has been able to extract at least any tangible benefit from capitalizing reserves solely by increasing their exchange value. As history has shown, investing in growth is far more profitable than investing in reserves. Accumulation and savings do not develop the economy. India during the East India Company is a prime example.

As Karl Kautsky wrote at the beginning of the 20th century⁴, “when Europeans came to India in the 15th century, the Hindus were in many ways superior to them. Supplied in abundance with all the raw materials that its production needed, (...) this colossal country produced everything itself to satisfy its needs, and there was still a large surplus of products (...), the result was that their export was paid for almost only with precious metals. Since time immemorial, the flow of precious metals to India, the treasures accumulated there in the mountains, has not been interrupted” (c). As a result, Accumulation and Savings, or, more simply, treasures, played a cruel joke with India. Not only did the principle of asset reservation come to the fore in the preferences of Indian rulers and they accumulated current assets into treasures, slowing down the growth of their own economy and depriving production of new investments, but also mountains of precious metals that the Indian economy received as payment for its product, have become a coveted target for all sorts of predatory campaigns by Western counterparties. Thus, in 1600, the East India Company was created by decree, which later became the almost sovereign master of all of India.

As a result of India’s brisk trade with Great Britain with the help of the East India Company, the huge but archaic economy was completely depleted and suppressed by this modern and economically developed corporation.

It even went so far that the East India Company in India established taxes and acted as a coercive apparatus, performing state functions. Without going into the moral and ethical aspects of the East India Company, as a result of which about 10 million Indians died in the Bengal famine alone in 1769–1770, we see that Investment beats Accumulation.

It was India’s strategic dramatic mistake to withdraw assets from circulation, turning them into savings and savings. Investment is growth, savings is slowdown. The initially more powerful and richer business partner lost in the economic competition to a flexible and modern investment project.

For example, Canada made more than transparent conclusions from this story and other similar ones for itself. Since 2004, the Canadian government has decided to completely get rid of gold as an archaic asset and a symbol of the passing era of money-grubbing and treasure; and invest in a more profitable direction — the development of promising sectors of the economy, namely, science, technology and education (figure 1 Canada gold reserves).

In the field of education, for example, growth to date has amounted to more than 60%, filling the state budget, providing previously lagging regions with new jobs.

The Canadian Department of Foreign Affairs and International Trade (DFAIT), in its 2011 International Education report: A Key Driver of Canada’s Future Prosperity, shows that the income line of “international students” alone brings in more than $ 8 billion annually. In addition to tremendous material benefits and direct economic benefits, promising international students saturate Canada with fresh ideas and innovations, which opens up additional prospects for Canadian society (figure 2 Number of study permits issued in Canada from 2000 to 2019).

This is adequate data before the COVID-19 pandemic. We deliberately do not provide data for 2021, as the impact of the pandemic on the education market in Canada has yet to be assessed after the effect of the decline in supply and demand has been offset by the recovering economy.

Chapter 5
World Money Function
The moment of transition of real money to electronic or why do we need loan sharks
As we discussed earlier, since the middle of the 20th century, there was not enough real money to service the growing international trade turnover, that is, the money whose nominal value was equal to the real one and was provided mainly by precious metals, in particular gold.

The gold standard has become obsolete due

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⁴ The National State, the Imperialist State and the Alliance of States, by K. Kautsky. Author’s. per. T.R.— Moscow: Delo, 1917.

Fig. 1. Canada’s gold reserve 2000–2020

Study Permit Holders in Canada on December 31st, 2000-2019

Source: Canadian Bureau for International Education

Fig. 2. Number of study permits issued in Canada from 2000 to 2019
to the growing world GDP. Gold money could still function as a value equivalent, that is, Measure of Value, but it could no longer be a Means of Payment. The amount of gold lagged far behind the amount of goods, especially in the situation with the rapid growth of world GDP production in the second half of the 20th century.

The growing trade turnover had to be credited and paid for with new money that could adequately cover the commodity mass without changing the exchange rate balance according to the Fisher Equation. The money supply and the velocity of money circulation must correspond to the prices and quantity of goods and services covered. This problem could be solved only by the institution of world lending. Therefore, Real money gave way to Credit.

The first to issue credit cards was Diners Club. In 1950, the company offered a new loan product—a kind of privilege for wealthy clients who could use the loan for personal purposes on a club basis. All clients were known to each other, often were family friends and were well known to the company itself. They were large industrialists and entrepreneurs, but the prospects for credit cards were measured in much more significant numbers.

The new product became so successful and profitable that the Diners Club company took credit cards beyond the elite and began to issue them to everyone. In just a few years, the credit market grew from a small club of familiar people to several billion dollars.

Already in 1958, the giant Bank of America joined the struggle for a share in the credit card market, having issued its BankAmericard and laying the foundation for a new company Visa, now narrowly specialized only in credit cards. According to our estimates, by mid-2021, about 4 billion Visa cards alone are circulating in the global credit market, with a total turnover of more than $10 trillion per year. Let’s not forget about MasterCard with a turnover of under $9 trillion annually and a net profit of about 1.5 trillion for 2020.

Credit cards, as an element of electronic money, have gone far beyond the club business, and now, almost the entire population of the planet in one form or another uses credit cards, getting access on credit to still, in fact, unpaid goods and services. It was credit money that became that powerful stimulus for world production, which multiplied the consumption of the population. The global producer, in turn, got the prospect of growing demand and increased production by stimulating raw material prices.

Moreover, the emergence of the Internet around the world has made electronic money almost the only Means of Payment. Cash has completely become electronic wiring. People, paying for goods in one click, no longer even remember the Gold Standard, they only care about the exchange rate value of circulating currencies.

Earning and spending money, people do not even touch them. According to the estimates of the Ministry of Finance of Russia, in advanced economies such as the USA, Japan or Germany, cash has a share of no more than 10%. In emerging economies, the share of cash varies from 15% to 25%, while in backward economies it can go up to 50%, lagging far behind the global trend. But even in these countries, we are seeing a clear trend towards an increase in non-cash payments (figure 3: The share of cash in the total money supply by the level of economic development).

**Share of cash in total money supply**

Source: Ministry of Finance of the Russian Federation

<table>
<thead>
<tr>
<th>Country</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>25</td>
</tr>
<tr>
<td>Developing countries</td>
<td>15</td>
</tr>
<tr>
<td>The developed countries</td>
<td>9</td>
</tr>
</tbody>
</table>

Fig. 3. The share of cash in the total money supply by the level of economic development
velopment).

Thus, electronic money, being essentially credit money, further stimulates commodity exchange relations, facilitates lending operations, simplifies consumer loans and settlements among individuals.

Considering that today the founders and real owners of the most widespread credit card systems around the world, Visa and MasterCard, with a total annual turnover of two tens of trillion dollars, are companies with US jurisdiction, it is difficult to find a replacement for the dollar as World Money.

As we wrote earlier in the research on the US State Debt* — transactions in US dollars account for more than half of all world financial transactions. With a large lag in this indicator, the dollar is followed by the euro, which is also de jure world money, but really is not, because in this case — the size matters.

Conclusions

It is not profitable to keep money in treasures, and sometimes it is even death to speak out. Example India. More than clearly, on the example of one of the richest countries in gold, India shows that treasures are not a guarantee of financial stability, nor a guarantee of economic growth.

By getting rid of gold and investing the proceeds in education and science, you get more. Example Canada. By the way, like Russia — Canada has a fairly large share of raw materials in the structure of the economy, however, unlike Russia, this country was able to get away from the commodity dependence of exchange prices. Nowadays, the Canadian dollar is one of the most stable currencies in the world, and entry into the Index Dollar.

At the same time, Russia, having large reserves (figure 4 Gold reserves of the G20 countries as of March 2021), cannot boast of a stable national currency, periodically arranging exciting attractions for its citizens in the form of defaults and devaluations — 1998, 2008, 2014, 2021 (figure 5 Graph of the ruble against the dollar 2014–2021).

It should also be borne in mind that despite the growth in the value of gold in the historical perspective, gold itself as a Means of Payment is not able to replace modern money. If for the household gold can serve as an instrument of saving and accumulation, then on a national scale there are much more profitable and less risky areas of investment (figure 6 Gold price chart from 1970 to 2021).

Moreover, gold, as a speculative instrument and a Function of Savings, carries financial risks of the market environment, while the fundamental sectors of the economy — education and science — are stable and more prospective.

It is obvious that the manipulations of large players in the commodity markets, including in the gold section, can first overheat the asset market, rewriting historical highs, and then collapse quotes to junk prices. Countries dependent on the volatility of commodity prices are always and constantly on the brink of financial collapse. An example here is the Soviet Union, which completely made its economy dependent on the gold reserve and oil prices and ceased to exist as soon as oil prices collapsed — gold did not help to keep the economy from financial collapse (figure 7 Oil price chart from 1975 to 1992–1993).

In addition to the fact that gold in itself is neither a guarantor of the financial and economic security of the state, nor a reliable promising investment for the economy, at the world level, gold is also unable to provide a constantly growing trade turnover.

The multiply increased world gross product is several times greater than the amount of gold in the world, which completely excludes the ability of the gold equivalent to provide the Measure of Value and Means of Payment. Gold is no longer a measure of value, nor a means of circulation, nor a means of payment; gold is not capable of being world money. A return to the gold standard of currencies is not possible (figure 8 World GDP in USD, Figure 9 The amount of gold in the world in USD).

### Gold Reserves | G20

<table>
<thead>
<tr>
<th>Country</th>
<th>Last</th>
<th>Previous</th>
<th>Reference</th>
<th>Unit</th>
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<tbody>
<tr>
<td>United States</td>
<td>8133</td>
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<td>Tonnes</td>
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<td>127</td>
<td>Mar/21</td>
<td>Tonnes</td>
</tr>
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<td>South Africa</td>
<td>125</td>
<td>125</td>
<td>Mar/21</td>
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<tr>
<td>Mexico</td>
<td>120</td>
<td>120</td>
<td>Mar/21</td>
<td>Tonnes</td>
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<tr>
<td>South Korea</td>
<td>104</td>
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<tr>
<td>Canada</td>
<td>0</td>
<td>0</td>
<td>Mar/21</td>
<td>Tonnes</td>
</tr>
</tbody>
</table>

Source: IMF 2021

Fig. 4. Gold reserves of the G20 countries as of March 2021
Fig. 5. Chart ruble to dollar exchange rate 2014–2021

Fig. 6. Gold price chart from 1970 to 2021

Fig. 7. Oil price chart from 1975 to 1992–1993
Fig. 8. World GDP in USD

Fig. 9. The amount of gold in the world in USD
References

2. Fisher I. The Purchasing Power of Money: Its determination and relation to credit, interest and crises, 1911
3. Kautsky K. The National State, the Imperialist State and the Alliance of States Author’s. per. T.R.— Moscow: Delo, 1917.— 94 p.; 23
THE IMPACT OF UNIVERSITY COLLABORATION WITH STAKEHOLDERS ON EMPLOYMENT AND TURNOVER OF UNIVERSITY NEW VENTURES

© 2021 Radko N.
Doctoral Researcher, Henley Business School, University of Reading, UK
MGIMO University, Russia

© 2021 Korzhova N. A.
Prezident, Doctor of Economic Sciences, Financial Academy, Kazakhstan

© 2021 Skiba M.
Rector, Candidate of Pedagogical Sciences, Financial Academy, Kazakhstan

In order to allow knowledge to be spilloved and disseminated outside of academia, universities engage with diverse actors at different stages of knowledge production. For this universities build an ecosystem to promote and facilitate the interactive model of innovations. They engage with stakeholders by different modes and via providing different outputs naming licensing and new ventures creation. Except of creating new ventures, universities have a strong effect on the success of new companies via utilising their networks and facilities. This paper sheds light on what the entrepreneurial university is when it comes to the collaboration with other actors to support the development of new ventures.

Keywords: entrepreneurial university, stakeholders, new ventures, employment, company turnover.

1. Introduction.
In response to the changes in the economy the role of universities has evolved from purely producing new knowledge to generating profits or third-stream income and creating benefits to society [2]. Research on entrepreneurial universities and academic entrepreneurship have acknowledged the role of entrepreneurial mechanisms to benefit the economy and society in general [21].

However, the role of universities in entrepreneurial society has urged building wider perspectives embracing “greater variety in the extent and nature of academic entrepreneurship” [24, p. 584].

Recent literature on entrepreneurial universities and academic entrepreneurship originates from the recognition for changing policy and research interests placing business companies associated with commercialisation of research outcomes and intellectual property [11]. There is also a need to improve the understanding of the different context for entrepreneurship to evolve, as well as existing actors and mechanisms to facilitate the efficiency of new ventures created within the university boundaries [24].

There are gaps in the literature on both how to understand different types of new ventures generated by university academics and students as well as relationships between these and entrepreneurial changes at the university and its main activities. This paper would shade the light on this particular question.

This paper is structured as following: the next Section (2), set the context and develop hypothesis, Section 3 describes the Data and methodology, Section 4 describe the results of the study, while Section 5 Conclude and Discuss.

2. Contextual settings and hypothesis
Over the last couple of decades, literature on entrepreneurial university and academic entrepreneurship have been developed extensively [21] with the focus mostly on university spin-offs based on intellectual property from academia. Spinoffs as new ventures represent a crucial dimension for the university entrepreneurship. This type of companies are usually utilising business opportunities based on the new technologies emerged from academic research [18] funded by the Government and/or Industry. In this way they reflect specific entrepreneurial outcomes linked with research capacity of university staff to spillover research outcomes to the wider community [22]. Research have explored the variety of factors influencing the generation and success of spin-offs. Such factors include institutional support and national policies that helped to set up dedicated and specialised infrastructure.
such as business incubators or science and technology parks as well as funding for the research from government (collaborative research) and industries (contract research) [21].

Studies that focus on organisational factors also show the significance of technology transfer offices (TTOs) as a key for spin-offs to achieve success [9]. This includes the expertise and the networking capacities as well as their ability to recognise business opportunities and manage issues with equity ownership for spin-off companies [16].

This led us to hypothesis (H1): collaboration of universities with government, industry and technology transfer offices positively associated with university spin-offs.

Focus on university role have shifted from analysing available instruments to generate entrepreneurship from research commercialisation (licensing and spin-offs) to a broader scope of university capacity on entrepreneurship (e.g., staff and graduate start-ups). Broad scope of literature explores the role of Business Incubators and Science Parks in facilitating new ventures created by students [20]. In particular, the role of universities in facilitating self-employment of graduates via providing support from Business related units and programmes on business development as well as helping to link students with the entire business community [20].

However, it has been shown that literature on graduate entrepreneurship neglects the contextual nature of these activities [10]. Research is shading the light on contextual characteristics that drive entrepreneurial choice by prioritising institutional, organisational and regional contexts influencing the success of graduate start-ups [5]. University organisational capabilities and the business support provided by university business-related departments and the modules on business development determine the institutional support capacity to generate student ventures [5].

This led us to hypothesis that (H2): collaboration of universities with business incubators, venture capitalists and science parks positively associated with university start-up activities.

3. Data and method

In order to capture the efficiency of relationships between the entrepreneurial university and its stakeholders, we measure the outcomes of university spin-offs and start-ups (both staff and graduates) as entrepreneurial in terms of employment and turnover.

To perform our longitudinal study and test our hypotheses, we run Mixed effect models. We applied the Mixed effect model with dependent variables set as the employment and turnover of new companies.

Data in our analysis is unbalanced explicitly containing unobserved effects. Fixed effect models (hereafter FEM) are the more frequently used method to evaluate the outputs of university entrepreneurial activities [20], especially in the case of unobserved effects. However, there are concerns about applying FEM as results are much less generalisable comparing to Random effect models (hereafter REM). As an example, FEM coefficients are not allowed to vary, and nor can they be extended to three or more levels. They also do not provide an accurate measure of variance at higher levels [4]. On the other hand, FE analysis is more robust than RE as it can consistently estimate partial effects within time-constant omitted variables [27].

Considering the advantages and drawbacks of both approaches, we applied the random effect model, including university and time-fixed effects (or mixed effect approach) for the unbalanced panel data for the period between 2010–2016 for 168 UK universities. We consider the following model:

\[ y = X\beta + Zu + \varepsilon \]  

(1)

where \( y \) is the outcome for our three dependent variables for universities \( i = 1, \ldots, n \) and is measured repeatedly at times \( t = 1, \ldots, T_i \); \( X \) is a matrix for the predictor variable; \( \beta \) is a column vector for the fixed-effects regression coefficient; \( Z \) is the design matrix of the random effects; \( u \) is a vector for the random effects; and \( \varepsilon \) is a column vector of the residuals (or the part of \( y \) not explained by the model \( X\beta+Zu \)).

3.1. Data

The sample in our analysis comprises 168 UK universities using data collected by the Higher Education Statistics Agency (HESA), specifically the university-business collaboration survey (Higher Education Business and Community Interaction Survey (HE-BCIS)). The data is open access and is provided at the individual university level. The information also covers issues on universities’ strategic priorities in entrepreneurial activities, income levels and other activities related to commercialisa-
Thus, collaboration with government is represented (Guerrero et al., 2015) and training universities provide for the business intellectual property office. The number of new companies created via utilising university inventions [20]. However, this measure does not include the number of new companies created by university students, when entrepreneurial activity and outcomes usually emerges from programmes and classes taken at the university [24].

Dependent variable.
The dependent variables for the purpose of this research are represented by three different types of entrepreneurial ventures, such as academic spin-offs and staff and graduate start-ups. To explore factors that affect entrepreneurial outcomes, we explore university spin-offs and start-ups created by staff and graduates in terms of employment and turnover [20].

Independent variables
Our independent variables based on the different knowledge transfer channels as well as the outcomes of activities with different stakeholders. Thus, collaboration with government is represented by the value of collaborative research contracts per staff member or the volume of funding that government (both UK and EU) provides to universities to conduct research [12]. From the knowledge transfer channel perspectives, university and industry collaborate via the total value of consultancy per staff member, as well as the value of contract research (Guerrero et al., 2015) and training universities provide for the business [15] (e.g., bespoke courses at business premises and courses for professional development).

We proxy the collaboration between university and TTO by the fact if academia uses TTO services that are both internal and/or external to the university [25]. The number of patents granted per staff member is a knowledge transfer channel and represents collaboration between university and intellectual property office [13].

We measure collaboration between university and science parks and business incubators by the fact of whether universities provide such services or otherwise both internally and/or through outsourcing. Venture capitalists, as stakeholders, are represented by the total value of investment they provide for the development of university spin-offs and staff and graduate start-ups.

Control variables
We include university age as a proxy for maturity. For university characteristics, we considered the following variables as controls: total value from renting facilities, a strategic plan for business engagement, incentives for the university staff to engage with business, is the university a part of the Russel Group or otherwise, as well as the university’s total income and expenditure.

As for facilities, academia can utilise its buildings and equipment and rent them to businesses, encouraging entrepreneurial behaviour and generating third-stream income [7]. Thus, according to Huffman and Quigley [14], one of the reasons for Silicon Valley’s success was the access provided to companies in terms of being able to utilise Stanford University’s equipment and facilities. In addition, the industrial park created by Stanford on university-owned land facilitated the co-location of companies and enhanced knowledge diffusion and sharing. Sharing of facilities could help a company to develop and evaluate prototypes [1].

4. Results
Our descriptive results focussed on the evaluation of new ventures created at the university over time in terms of turnover and employment.

Tables 1 and 2 report the results for the mixed effect models considering employment and turnover of new companies created.

4.1. The role of Government, Industry and TTO in university entrepreneurial outcomes
As far as all the outputs of activity and control variables are concerned, results are significant at the 10%, 5% and 1% levels for the support provided by the Government, Industry and Technology Transfer Offices, supporting our H1 partly as these stakeholders have effect on both university spin-offs and start-ups.

We begin by discussing baseline results between the entrepreneurial outcomes of the university and the knowledge enabler stakeholder group by estimating the regression, Eq. (1). The results are reported in Table 1. As for government, the support it offers to different extents contributes to university spin-offs formation. Our results show that all types of funding except other public funding is significant to different extents to spin-offs employment.
<table>
<thead>
<tr>
<th>Table 1. Results for collaboration of universities with Government, Industry and TTO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Employment of new companies</td>
</tr>
<tr>
<td></td>
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<tr>
<td>BEIS research income</td>
</tr>
<tr>
<td>Other UK Government departments funding</td>
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<tr>
<td>Collaborative contribution EU government</td>
</tr>
<tr>
<td>Collaborative contribution other public funding</td>
</tr>
<tr>
<td>Log Contract research: Total value of contracts (£ thousands)</td>
</tr>
<tr>
<td>Log Consultancy: Total income (£ thousands)</td>
</tr>
<tr>
<td>Total value from CPD per staff</td>
</tr>
<tr>
<td>Does university provide bespoke courses at business premises</td>
</tr>
<tr>
<td>Total number of patents granted per staff</td>
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<tr>
<td>TTO exist in university for commercialisation</td>
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<tr>
<td>TTO and external agency support for commercialisation</td>
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<td>N_groups</td>
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<td>rho</td>
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<tr>
<td>Model 2: Turnover of university new companies</td>
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<td>Model 3: Creation of university new companies</td>
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<td>N_groups</td>
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</table>

Robust Standard errors; * p < 0.1; ** p < 0.05; *** p < 0.01
and turnover. Thus, the most significant impact is associated with the EU government funding on the turnover of spin-offs, or 0.012 percentage points (significant at the 1% level). As for start-ups, government support contributes only to increasing employment in this type of new ventures. Thus, other UK government departments’ funding is associated with a 0.029 percentage point in staff start-ups’ employment, while the contribution from other public funding is 0.031 percentage points to employment increases in graduate start-ups.

Industry contribution to entrepreneurial outputs is characterised by the following results. Only the total value of contract research is associated with the likelihood of university spin-off formation or, in particular, a contribution of 0.078 percentage points (significant at the 1% level) to employment increase and 0.097 percentage points to turnover growth (significant at the 10% level). As for university start-ups, while consultancy is positively associated with employment (0.038 percentage points, significant at the 10% level) of this type of new venture, contract research negatively affects the turnover and employment of graduate start-ups.

As for Technology Transfer Offices located at the university, this stakeholder positively associated with employment in graduate start-ups or 0.285 percentage points (significant at the 1% level).

4.2. The role of Business Incubators, Science Parks and Venture Capitalists in university entrepreneurial outcomes

Table 2 shows the results for the knowledge facilitators stakeholder group. Our H2 is partly supported, and we found that the availability of business incubators and external investment are more vital to the creation of university start-ups while also having effect on spin-offs success.

The only factor which is significant for university spin-offs is the external investment provided. This factor increases the likelihood of the turnover (0.225 percentage points at the 1% level of significance) and employment (0.099 percentage points at the 1% level of significance) of university spin-offs. However, the funding provided to graduate start-ups is negatively associated with the likelihood of university spin-off turnover. However, external science parks negatively contributed to staff start-up employment and turnover, while business incubation support positively affects turnover and employment of graduate start-ups (at the 1% and 5% levels of significance).

Other factors included in the model also contributed to the final outcomes of the entrepreneurial university. Thus, being in a Russell Group university, in general, negatively associated with the likelihood of employment of graduate start-ups. This might be explained by the strong research orientation of this type of university.

In addition, orientation towards regional needs increases the likelihood of staff start-up employment (0.124 percentage points at the 5% level of significance).

As for the incentives for staff to engage with business and community, this factor increases the likelihood of university spin-offs and staff start-up employment (at the 5% level of significance) and turnover (1% level of significance).

Furthermore, utilisation of university facilities and equipment increases the likelihood of employment in graduate start-up (0.068 percentage points at the 5% level of significance).

4.5. Results Discussion.

By analysing the impact of university collaboration with different actors, this paper explores the contribution of university stakeholders into the success of university new ventures.

Thus, both government and industry contribute to university spin-offs creation. Government’s support for research activities in the form of financial resources is one of the key elements of entrepreneurship [8]. As for the industry, its input is also explained by the financial support for research projects [15], facilitating the exchange of ideas and information.

With respect to codified knowledge, intellectual property rights (patents in our case) also facilitate new ventures creation [25] through the support of technology transfer offices (i.e., TTOs help to evaluate the invention and provide a platform to develop skills and be connected with businesses in the industry) [6].

Presence of business incubators, science parks and venture capitalists are positively associated with university start-ups. In particular, the presence of business incubators as well as external funding from venture capitalists positively contribute to staff start-ups employment and graduate start-ups employment and turnover [22]. These results are contribution to the literature as there is no systematic evidence to prove that business incubators are efficient tools by which to promote job creation and wealth in new companies [17]. Moreover, the avail-
ability of business incubators is more supportive of graduate start-ups compared to other types of new venture [21]. External science parks have a negative influence on employment and turnover of university spin-offs. Interestingly, this is a novel finding, not yet described or reported in the existing literature. Further research may look for more detail as to the role of external and on-campus science parks in facilitating university entrepreneurial outcomes. As for other factors, supporting previous findings our research shows that being a member of a Russell Group university has a reputational impact on the university’s spin-outs [23]. Facility and equipment leasing income have a positive association with knowledge transfer income. These results are consistent with the previ-

### Table 2. Results for collaboration of universities with Business Incubators, Science Parks and Venture Capitalists/Business Angels

<table>
<thead>
<tr>
<th>Model 1: Employment of new companies and university IP revenues</th>
<th>University spin-offs</th>
<th>Staff start-ups</th>
<th>Graduate start-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log External investment: Spin-offs with university ownership</td>
<td>0.099*** (0.01)</td>
<td>0.022** (0.01)</td>
<td>-0.007 (0.02)</td>
</tr>
<tr>
<td>Log External investment: Start-ups with university ownership</td>
<td>0.026 (0.02)</td>
<td>0.153*** (0.01)</td>
<td>0.001 (0.02)</td>
</tr>
<tr>
<td>Log External investment: Graduate start-ups</td>
<td>-0.003 (0.01)</td>
<td>0.034*** (0.01)</td>
<td>0.234*** (0.02)</td>
</tr>
<tr>
<td>External Science Park</td>
<td>0.059 (0.10)</td>
<td>-0.144* (0.08)</td>
<td>-0.144 (0.14)</td>
</tr>
<tr>
<td>Science Park at university</td>
<td>0.070 (0.11)</td>
<td>-0.099 (0.09)</td>
<td>-0.208 (0.16)</td>
</tr>
<tr>
<td>Business incubator support at the university</td>
<td>0.020 (0.08)</td>
<td>0.115* (0.06)</td>
<td>0.480*** (0.11)</td>
</tr>
<tr>
<td>Business incubators support out of the university</td>
<td>0.119 (0.17)</td>
<td>0.228* (0.14)</td>
<td>0.599** (0.23)</td>
</tr>
<tr>
<td>Other controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>chi-squared</td>
<td>926.884</td>
<td>292.836</td>
<td>408.060</td>
</tr>
<tr>
<td>N_groups</td>
<td>168</td>
<td>168</td>
<td>168</td>
</tr>
<tr>
<td>rho</td>
<td>.620</td>
<td>.722</td>
<td>.754</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 2: Turnover of university new companies</th>
<th>University spin-offs</th>
<th>Staff start-ups</th>
<th>Graduate start-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log External investment: Spin-offs with university ownership</td>
<td>0.225*** (0.02)</td>
<td>0.046** (0.02)</td>
<td>-0.051* (0.03)</td>
</tr>
<tr>
<td>Log External investment: Start-ups with university ownership</td>
<td>-0.0235 (0.03)</td>
<td>0.287*** (0.04)</td>
<td>-0.013 (0.04)</td>
</tr>
<tr>
<td>Log External investment: Graduate start-ups</td>
<td>-0.050*** (0.02)</td>
<td>0.049* (0.03)</td>
<td>0.506*** (0.03)</td>
</tr>
<tr>
<td>External Science Park</td>
<td>0.086 (0.19)</td>
<td>-0.362* (0.20)</td>
<td>-0.177 (0.24)</td>
</tr>
<tr>
<td>Science Park at university</td>
<td>0.297 (0.21)</td>
<td>-0.173 (0.22)</td>
<td>-0.056 (0.27)</td>
</tr>
<tr>
<td>Business incubator support at the university</td>
<td>0.167 (0.15)</td>
<td>0.164 (0.16)</td>
<td>0.621*** (0.19)</td>
</tr>
<tr>
<td>Business incubators support out of the university</td>
<td>-0.342 (0.31)</td>
<td>0.103 (0.33)</td>
<td>0.044 (0.40)</td>
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<tr>
<td>Other controls</td>
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<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>chi-squared</td>
<td>499.178</td>
<td>204.606</td>
<td>471.204</td>
</tr>
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<td>168</td>
<td>168</td>
</tr>
<tr>
<td>rho</td>
<td>.751</td>
<td>.669</td>
<td>.755</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Model 3: Creation of university new companies</th>
<th>University spin-offs</th>
<th>Staff start-ups</th>
<th>Graduate start-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log External investment: Spin-offs with university ownership</td>
<td>0.040** (0.02)</td>
<td>0.001 (0.03)</td>
<td>-0.007 (0.01)</td>
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<tr>
<td>Log External investment: Staff start-ups with university ownership</td>
<td>0.004 (0.03)</td>
<td>0.152*** (0.04)</td>
<td>-0.019 (0.02)</td>
</tr>
<tr>
<td>Log External investment: Graduate start-ups</td>
<td>0.001 (0.02)</td>
<td>0.000 (0.04)</td>
<td>0.057*** (0.01)</td>
</tr>
<tr>
<td>External Science Park</td>
<td>0.053 (0.19)</td>
<td>0.225 (0.32)</td>
<td>-0.009 (0.12)</td>
</tr>
<tr>
<td>Science Park at the university</td>
<td>0.197 (0.18)</td>
<td>0.434 (0.31)</td>
<td>-0.085 (0.15)</td>
</tr>
<tr>
<td>Business incubator support at the university</td>
<td>0.087 (0.17)</td>
<td>0.562 (0.28)</td>
<td>0.406*** (0.11)</td>
</tr>
<tr>
<td>Business incubators support out of the university</td>
<td>-0.052 (0.34)</td>
<td>-0.066 (0.56)</td>
<td>0.418** (0.20)</td>
</tr>
<tr>
<td>Other controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>chi-squared</td>
<td>171.636</td>
<td>82.791</td>
<td>115.766</td>
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<tr>
<td>N_groups</td>
<td>168</td>
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</tbody>
</table>

Robust Standard errors; * p < 0.1; ** p < 0.05; *** p < 0.01
ous literature, indicating that collaboration with industry forged via utilising university equipment and facilities can increase the outcome of knowledge transfer activities [13].

Our results are also supportive of the literature with regard to university strategy, showing that university strategic orientation and its entrepreneurial component shape the entrepreneurial outcomes of the university [28].

5. Conclusion

Via analysing the effect of university collaboration with relevant stakeholders on the success of the university new ventures, it is possible to identify the following factors which are important:

Government:
- financial support for research and development in the form of collaborative research.
- support of venture capitalists for new ventures in the form of finance and managerial skills;

Universities:
- university strategic orientation and its entrepreneurial dimension;
- support for the faculty for managing IP rights;
- supporting the development of technology transfer offices;
- the development of business incubators and science parks around the university;
- utilising university facilities for the benefits of business.

Research implication and recommendations

With regard to research implications, the management teams at universities might gain some insights into how, in general, the knowledge transfer process occurs at the university. This paper has deciphered which contribution, and at which stage different types of stakeholders provide in the process of knowledge creation and spillover. The challenge for university management teams might be how to manage and balance each stakeholder’s interests to maximise the entrepreneurial outputs of the university.

References

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The article investigates the phenomenon of the category «production efficiency» and its types. The study was conducted on the basis of systematization and generalization of foreign and domestic scientists’ views on the problem of determining business efficiency. At the same time, the views of leading scientific schools have been studied to identify the main trends affecting the procedure for determining and assessing the efficiency of organizations at the current stage of society’s development.

Keywords: efficiency theory, types of efficiency, features of business efficiency evaluation, management.

References


RESEARCH OF RUSSIAN EXPORT DEVELOPMENT BASED ON EXTERNAL ECONOMIC STATISTICS

© 2021 Kruglov Vadim Sergeevich
Candidate of Economic Sciences, Associate Professor
Volga Region Institute of Management named after P.A. Stolypin RANEPA
under the President of the Russian Federation, Saratov, Russia
E-mail: kruglov885@gmail.com

© 2021 Ermilov Igor Sergeevich
Candidate of Economic Sciences, Head of the Department of Foreign Economic Activity
Maria Furniture Factory LLC, Saratov, Russia
E-mail: igorermilov@yandex.ru

© 2021 Tolmachev Mikhail Nikolaevich
Doctor of Economic, Professor of Business Analysis Department
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: MNTolmachev@fa.ru
The article analyzes the development of foreign economic activity in the Russian Federation, its impact on the country’s economy. Factual and statistical material characterizing the place of Russia in world trade is generalized. The main problems that accompany the implementation of foreign economic activity today are identified and directions for the development of Russian exports are proposed.

*Keywords: international trade, foreign economic activity, export, import, customs payments*

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CLASSIFICATION OF POSSIBLE VIOLATIONS WHEN SPENDING FUNDS ON FEDERAL PROJECTS

© 2021 Petrov Alexander Mikhailovich
Doctor of Economic Sciences (Advanced Doctor), Professor of Business Analysis Department
Financial University under the Government of the Russian Federation, Moscow, Russia
Professor of the Academic Department of Accounting and Taxation
Plekhanov Russian University of Economics, Moscow, Russia
E-mail: palmi@inbox.ru

Based on the ranking of possible violations when spending funds on federal projects, the article explores approaches to assessing industry risks and develops a system of indicators for assessing industry risks in the process of spending funds. The necessity of using various methods of risk assessment in the practice of business entities is determined and a characteristic of their possible application is given. The author gives his own point of view on the methods of risk management, the formation of a system of indicators and the process of selection of key risk indicators. The principles of effective formation of key risk indicators are revealed.

Keywords: human capital, culture, safe and high-quality roads, housing and urban environment, ecology, science, state strategic planning.

ACCOUNTING FOR ENSURING THE PERFORMANCE OF CONTRACTUAL OBLIGATIONS IN RUSSIA

© 2021 Petrova O. A.
Senior Lecturer professor of Business Analysis Department
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: olga1717@bk.ru

One of the fundamental principles of financial reporting is the reflection of reliable information about the financial position of the organization. Consequently, accounting issues for any type of liability are extremely important. In this article, we will pay attention to the issue of accounting for contractual obligations.

Keywords: accounting, analysis, audit, taxation, contractual obligation, pledge

FAIR VALUE CONCEPT IN GENERAL ACCOUNTING CONCEPT

© 2021 Savin A. A.
PhD in Economics, Professor at the Department of Audit and Corporate Reporting
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: aasavin@fa.ru

One of the fundamental principles of financial reporting is the reflection of reliable information about the financial position of the organization. Based on this, the same principle should be applied by all economic entities in accounting, since accounting registers are the main source of information in the preparation of financial statements, regardless of the standards applied in their preparation.

Keywords: accounting, analysis, audit, taxation, law, relationship
IMPROVEMENT OF THE MANAGEMENT ACCOUNTING SYSTEM ON THE BASIS OF MODERN INFORMATION TECHNOLOGIES ON THE EXAMPLE OF THE ROAD TRANSPORTATION MARKET

© 2021 Savin A. A.
PhD in Economics, Professor at the Department of Audit and Corporate Reporting
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: aasavin@fa.ru

The state of the world transport system is changing, as new requirements are imposed on all types of transport in the context of globalization and the development of international relations. There are special requirements for the speed and timeliness of cargo delivery. A network of warehouse and distribution systems is being developed. Hence the need arises to improve the management accounting system based on modern information technologies.

Keywords: accounting, analysis, audit, taxation, management accounting, transport system

FACTORS INFLUENCING THE DIVERGENCE OF FOREIGN TRADE STATISTICS AND THEIR SIGNIFICANCE

© 2021 Tolmachev M. N.
Advanced doctor of Economics, The head of Department of business-analysis
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: mntolmachev@fa.ru

© 2021 Zemskova O. N.
PhD in Economics, Associate Professor of Department of business-analysis
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: ONZemskova@fa.ru

© 2021 Narbut V. V.
PhD in Economics, Associate Professor of Department of business-analysis,
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: vvnarbut@fa.ru

The article examines important aspects of the dynamics of foreign trade relations that are relevant today, especially in the context of the intensification of the constant sanctions struggle. In order to understand how to properly manage export and import flows, it is necessary to find out the main reasons that affected foreign trade activities in the past. Knowledge of key factors helps to shape the future strategy of foreign trade management.

Keywords: analysis, aspects, activation, foreign economic activity, information, international scale, national section, customs authorities, unification.
SPATIAL ANALYSIS OF INTER-REGIONAL DIFFERENTIATION OF THE RUSSIAN LABOR MARKET

© 2021 Tolmachev Mikhail Nikolaevich
Doctor of Economic, Professor of Business Analysis Department
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: MNTolmachev@fa.ru

© 2021 Nikiforova Elena Vladimirovna
Doctor of Economic, Professor of Business Analysis Department
Financial University under the Government of the Russian Federation, Moscow, Russia
E-mail: EVNikiforova@fa.ru

The paper discusses the influence of the spatial factor on regional unemployment rate. Based on the comparison of models, the optimality of the division of regions into “West” and “East” clusters is shown. The conclusion is made about the significance of the impact on unemployment of small business development and housing affordability. Structural factors, primarily the share of “government and military security” in the gross regional product, should have an additional impact on the regional labor markets of the European regions of Russia.

Keywords: unemployment, regions of Russia, panel analysis, spatial factor

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References

TECHNOLOGY VENTURING IN THE USA: MARKET DEVELOPMENT AND PRACTICE OF CONTEMPORARY START-UPS

© 2021 Voinov A. I.
Moscow State Institute of International Relations (MGIMO),
International Institute for Energy Policy and Innovation Management, Moscow, Russia
E-mail: vo_innov@mail.ru

© 2021 Torkanovsky E. P.
Institute of Economics of the Russian Academy of Sciences, Moscow, Russia
E-mail: torkanovsky@gmail.com

© 2021 Shakirova A. A.
Russian State Academy of Intellectual Property (RGAIS), Moscow, Russia
E-mail: tonys132435@gmail.com

The American venture financing system has been considered a kind of organizational and structural benchmark for the risk capital institute around the world for more than half a century, and a significant number of publications of specialists are devoted to this. However, other specific factors of the national venture capital market development that influence the advanced technological achievements of the United States remain relevant.

Keywords: institutional infrastructure, market architecture, patenting