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# Journal of Applied Economic Sciences

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The Dynamic Model of Elements’ Interaction within System of Science-Intensive Production under Unstable Macroeconomic Conditions

Analytical Review of the Contemporary State of the Russian Scientific Organizations from the Development Management Position
Fuzzy Set Model of Project Portfolio Optimization Inclusive for Requirements of Stakeholders

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Abstract:
The paper suggests a fuzzy model for the formation of an optimal portfolio of investment projects of the company, which adheres to stakeholder management as a discrete institutional alternative. It considers companies whose main stakeholders are company personnel, founders and investors; society; structures and bodies of state administration. Each of the stakeholders has its own requests in relation to the company. Optimization of the portfolio is based on the proposed multiplicative utility function, which reflects the stakeholder importance of projects and includes, along with the indicator of economic efficiency, qualitative indicators characterizing social and state significance. Risk management is carried out within the framework of the portfolio investment theory of H. Markowitz using the scenario approach. To model the uncertainty of input parameters and the results of project implementation, a fuzzy set approach is used, in which verbal expert estimates of input parameters and results of projects are transformed into fuzzy sets with subsequent formulation and solution of fuzzy optimization problems. A fuzzy model is transformed into a clear quadratic programming problem, which is solved using standard numerical methods. An example of the formation of a portfolio of real projects of a construction company, a developer, operating in the market of the Primorsk Territory of the Russian Federation, is considered.

Keywords: project portfolio optimization; stakeholder approach; social significance; utility function; fuzzy model

JEL Classification: C61; O21

Introduction

This paper is a continuation of works of the authors devoted to the problem of formation of a portfolio of investment projects of the company on the basis of the project utility function, which allows to compare projects and programs and find the optimal solution using a certain principle of domination.

A stakeholder theory has become widespread in the works on project management optimization. In particular, articles Vayyavur (2015), Eskerod, Hamann and Ringhofer (2016) provide an overview of the principles of application of the stakeholder theory in the project activity. Various areas of application of the stakeholder theory can be met in the works on portfolio investment. For example, articles of Rojas and Liu (2015), Ang, Killen, and Sankaran (2015) note that the core goal of the project portfolio management is to maximize the strategic significance of tangible and intangible value of the portfolio for all stakeholders. Integrated decision-making models can help project practitioners in the design, planning, and achievement of objectives of many stakeholders in the

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framework of project portfolio management. Due to this, these articles also indicate the need for further research on the impact of choosing the most appropriate environment for relations with stakeholders to maximize the project value. Article of Rajablu, Marthandan, Wan Fadzilah and Wan Yusoff (2015) is devoted to the analysis of six key indicators of the stakeholder theory that impact the success of the project. However, the data are processed using statistical methods and procedures, which are considered insufficiently efficient due to the presence of ambiguous and fuzzy estimates of project efficiency indicators for various stakeholders.

Analysis of the impact of accounting for corporate social responsibility on investment efficiency has become widespread in recent years (Benlemlih and Bitar 2016). In their previous works, the authors considered an approach under which the company's corporate social responsibility is expressed during goal-setting, inclusive of the interests of all stakeholders (Mazelis and Solodukhin 2013, Mazelis, and Solodukhin 2015, Mazelis, Rokhmanova and Solodukhin 2012), while the utility of the project is considered as levels of achievement of the goals achieved during the project implementation. Alternatively, to this approach, the models have been proposed to optimize the project portfolio within the investment program of development inclusive of risks and corporate social responsibility of the company, which adheres to a stakeholder management as discrete institutional alternatives (Lihosherst, Mazelis and Chen 2015, Mazelis, Solodukhin, Chen and Tarantaev 2016). The models are based on an approach that takes into consideration the need to use the principles of corporate social responsibility when developing strategic plans of activity (Maltseva 2009). For example, additional indicators of social and state value are introduced along with indicators of economic efficiency, and evidence of the efficiency of their account is provided in order to reflect a stakeholder significance of the project.

In the context of the increasing uncertainty, it seems promising to use the fuzzy set approach, where the verbal expert estimates of the input parameters, possible results of the projects implementation and the emerging risks are transformed into fuzzy sets with a subsequent formulation and solution of fuzzy optimization problems. Fuzzy optimization models with fuzzy objective functions and fuzzy constraints allow to obtain various solutions at various exogenously specified confidence levels (Anshin 2015). Increased attention in the works on project and portfolio investment in recent years has been paid to the use of fuzzy sets (Wei Zhou 2014).

Risks are accounted in the model within the framework of the portfolio investment theory of H. Markowitz using the scenario approach.

In the continuation of the paper of the authors (Lihosherst, Mazelis and Chen 2015), a modification of fuzzy models and an algorithm for their solution, which does not use the intermediate defuzzification of fuzzy variables at a rather early stage and the formulation of an optimization model using medians of fuzzy numbers, are proposed.
Conclusion

This paper proposes a fuzzy optimization model for the formation of a portfolio of investment projects, which allows to take into account non-financial indicators of social significance and state significance of projects, along with economic indicators, which allows to take into account the requirements of the main stakeholders.

Risks are managed within the framework of the portfolio investment theory of H. Markowitz using the scenario approach. The model is a fuzzy quadratic programming task with a multiplicative objective utility function, which uses expert verbal assessments of qualitative indicators of social and state significances converted to fuzzy trapezoidal numbers. The fuzzy set approach allows to model the lack of information in the implementation of each scenario for the quantitative indicator of the economic efficiency of the project "net present value". Constraints in the model are also fuzzy. The fuzzy optimization task is reduced to a crisp one at the given significance level for the objective function and constraints and can be solved by standard numerical methods. By setting various levels of reliability, the decision-maker takes into account the existing uncertainty, to a greater or lesser extent. This will change the composition of the portfolio.

Acknowledgments

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References


The Impact of the Global Economic Crisis on Rural and Urban Poverty Gap

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Abstract:
In this study, we examine the impact of the 2008 Global Crisis on poverty gap across the globe. We look at the populations living on less than $1.25, $2, $2.50, $4, and $5 a day. We find that before the crisis, the poverty gap had been declining especially for the relatively less-poor population (i.e. the population living on less than $4 or $5 a day). This improvement in the poverty gap stopped after the crisis. When we examine the rural poverty gap and the urban poverty gap pre- and post-crisis, we find similar results. During the pre-crisis period, both rural and urban poverty gap had declined, but after the crisis, this improvement stopped. Overall, we suggest policymakers to focus on both rural and urban poverty rates when facing an economic crisis. We also suggest policymakers to focus on protecting the relatively less-poor population (i.e. the population living on less than $4 or $5 a day) since this group is the one that suffers the most due to an economic crisis.

Keywords: poverty; poverty gap; global crisis; economic crisis
JEL Classification: I30; I32; G01

Introduction
Several previous studies (i.e. Dhanani and Islam 2002, Skoufias and Suryahadi 2000, Zin 2002, and others) examine the impact of economic/financial crises on poverty. These studies generally show that an economic or financial crisis increases poverty levels.

In this study, we focus on the 2008 Global Crisis and examine the impact of this crisis on poverty gap across the globe. Poverty gap is the mean shortfall of the total population from the poverty line (counting the nonpoor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

We make three main contributions. First, we do not focus on a single country or a region. Instead, we use a comprehensive dataset of 173 countries which are in World Bank’s World Development Indicators dataset. By using a more comprehensive dataset, we are hoping to draw more generalized conclusions when compared to the previous studies.

Second, we differentiate between rural poverty gap and urban poverty gap. In other words, we examine the impact of the 2008 Global Crisis on rural poverty gap and urban poverty gap separately. This way, we will know whether a big economic crisis like the 2008 crisis affects rural poverty, urban poverty or both.

Finally, we differentiate between different levels of poverty. We use several poverty gap measures using certain dollar amounts (the mean shortfall from $1.25, $2, $2.50, $4, or $5 a day) as well as poverty levels at national poverty lines (the mean shortfall from national poverty lines which are national estimates based on population-weighted subgroup estimates from household surveys). Using several poverty measures will ensure the validity of our results.

We believe that the results found in this study will shed a new light on the relation between economic/financial crises and poverty. We are doing our analyses during a very distinct time period in history: the period before and after the 2008 crisis. This is a very significant event; it affected all of the countries in the world, and its impact is still continuing.

The paper proceeds as follows: Section 2 reviews the previous literature. Section 3 states our hypotheses. Section 4 explains the data and the methodology. Section 5 shows the empirical results. Finally, Section 6 concludes.
Conclusion

In this study, we examine the impact of the 2008 Global Crisis on poverty gap across the globe. We use World Bank’s World Development Indicators dataset. This dataset has poverty data on 173 countries across the globe.

As our sample period, we choose the 2005-2012 period which covers the three-year period before and after the crisis. We then look into the populations living on less than $1.25, $2, $2.50, $4, and $5 a day. We look into several variables including “poverty gap”, “poverty gap at national poverty lines”, “rural poverty gap at national poverty lines”, “rural poverty headcount ratio at national poverty lines”, “urban poverty gap at national poverty lines”, and “urban poverty headcount ratio at national poverty lines”.

Our results show that poverty gap had been declining especially for the relatively less-poor population (i.e. the population living on less than $4 or $5 a day) since this group is the one that suffers the most due to an economic crisis. We then look into the populations living on less than $1.25, $2, $2.50, $4, and $5 a day. This improvement in poverty gap stopped after the crisis started. When we examine the rural poverty gap and the urban poverty gap separately pre- and post-crisis, we find similar results. During the pre-crisis period, both rural and urban poverty gap had declined, but after the crisis started, this improvement stopped.

Overall, we suggest policymakers to focus on both rural and urban poverty rates when facing an economic crisis. We also suggest policymakers to focus on protecting the relatively less-poor population (i.e. the population living on less than $4 or $5 a day) since this group is the one that suffers the most due to an economic crisis.

References


Tracing Value Added and Job Creation Across Industries in the Slovak Republic

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Suggested Citation:

Abstract:
Increasing participation of the Slovak Republic in the global value chains (GVCs) represents one of the key implications of the steadily growing position of important Slovak industries in both domestic and international terms. Slovak Republic is mainly positioned in the downstream activities of GVCs. However, this fact contributes to the relatively limited domestic value added creation. The aim of this article is to analyze whether the changes and the increasing participation of the Slovak republic in the GVCs influenced the position of important industries in term of value added creation and employment. We analyze the multipliers of production and value added using input-output model. The factors of skill structure of labor demand will be estimated using the system of cost share equations derived from translog cost function. The data covers period 2000-2014 and 1995-2009 for socio-economic analyses and come from World Input-Output Database (WIOD). The results for two analyzed industries show that their impact on total industrial production has decreased during the analyzed period. The results for employment analysis clearly revealed the differences between domestic and foreign orientated industry.

Keywords: value added; employment; multipliers; GVCs; offshoring; labor demand; input-output model; translog cost function

JEL Classification: J31; F14; F16

Introduction
Over the past decade, there has been a significant change in the organization of world trade and production. The share of regions in world added value has considerably changed. The share of the value added EU27 was 29% by 2003, while in 2011 it was only 24% (Lábaj 2014). World exports of value added are around 70% - 75% of gross exports while in the 1970s and 1980s it varied around 85%. However, there are large differences in this indicator between countries (Johnson 2014). EU countries from Central and Eastern Europe (CEE) generate about 5% lower domestic value added compared to old EU (EU15) countries. Foreign value added represents a larger share of CEE exports than the EU-15. Although the CEE countries have become major suppliers of intermediates and components, semi-final products and final products, they are shown to have an increasing share of imports included in their exports. In the CEE, the share in global value chains (GVCs) is higher than the EU-15 average, so they can improve their positions in the long run and increase domestic added value in exports (Vrh 2015). Therefore, this article will be interested in the question whether the changes and the increasing participation of the Slovak republic in the GVCs were influenced the position of important industries in term of value added creation and employment. We will analyze the multipliers of production and value added using input-output analysis. The factors influencing the skill structure of labor demand will be estimated using the system of cost share equations derived from translog cost function. The data covers period 2000-2014 and 1995-2009 for socio-economic analyses and come from World Input–Output Database (WIOD).

This paper is divided into five sections. Following the introduction, the relevant empirical literature is reviewed in Section 1. In Section 2 we provide a description of characteristics regarding analyzed industries and skill upgrading. In Section 3 we provide main results of input-output analysis of selected industries with a brief overview of input-output model that we employ to calculate the values of multipliers. In Section 4 we discuss the effects of GVCs on employment particularly on the skill structure of labor demand. In this section we provide a brief overview of model that we employ to examine the impact of offshoring on labor demand as well. Finally, concluding remarks are made in Section 5.
Conclusion

Increasing participation of the Slovak republic in the GVCs were influenced the position of important industries in term of value added creation and employment. Slovak Republic is mainly positioned in the downstream activities of GVCs, often involving the assembly or manufacturing of components and parts. This contributes to the relatively limited domestic value added creation.

The position of two important industries such as automotive and construction is different. Although in both sectors, the impact on total industrial production is reduced due to an increasing dependence on imports. Significantly higher share of value added is observed in the construction sector contrary to the automotive sector. The multiplier of value added confirms the decreasing importance of automotive industry for value added creation in Slovakia. The multiplier in construction industry did not change significantly although the trend is positive. As expected, it is possible to conclude the important significance of construction for value added creation in Slovak economy. From these findings it is clear that, despite the low creation of value added, the position of the automotive sector is significant for the Slovak economy and affects the production of the whole economy. Similar results were obtained for the construction sector. It’s disturbing due to the strong dependence of the automotive sector on developments abroad, and due to the cyclical character of the industry that is prosperous especially in times of economic boom. Similarly, the construction sector is highly sensitive to economic developments and expectations either in the Slovak Republic or outside the Slovak Republic. The strong impact of these sectors on the Slovak economy may pose a significant threat to sudden unexpected external shocks.

Rising participation in GVCs caused not only changes in sectorial performance but also the important socio-economic impacts. The question is whether increased participation in GVCs is a cause of the negative effect on the labor-intensity in an industry? The results for Slovak automotive industry indicate that offshoring influenced negatively the cost share of medium and high skilled labor demand. The decrease demand for low-skilled labor could be attributed to wages. The rising demand for high skilled labor in Slovak automotive industry is driven by growth of gross output. The negative influence of offshoring is observed in construction industry as well. The comparison of results for these two industries revealed as expected significantly stronger impact of offshoring on the labor demand in case of automotive industry. The results clearly revealed the differences between domestic and foreign orientated industry. The main driver of changes in labor demand for domestic industry such as construction industry was level of wages, output growth and capital substitution.

Acknowledgement

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References


## APPENDIX 1

### Notation of variables for translog cost function

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<tr>
<th>Cost shares</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$S_{LS}$</td>
<td>Cost share of low skilled labor</td>
</tr>
<tr>
<td>$S_{MS}$</td>
<td>Cost share of medium skilled labor</td>
</tr>
<tr>
<td>$S_{HS}$</td>
<td>Cost share of high skilled labor</td>
</tr>
<tr>
<td>$S_{II}$</td>
<td>Cost share of intermediate inputs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input quantities</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$LS$</td>
<td>Number of hours worked by low skilled labor</td>
</tr>
<tr>
<td>$MS$</td>
<td>Number of hours worked by medium skilled labour</td>
</tr>
<tr>
<td>$HS$</td>
<td>Number of hours worked by high skilled labor</td>
</tr>
<tr>
<td>$II$</td>
<td>Intermediate inputs</td>
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</table>

<table>
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<tr>
<th>Flexible factor prices</th>
<th>Description</th>
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<tr>
<td>$w_{LS}$</td>
<td>Wage of low skilled labor</td>
</tr>
<tr>
<td>$w_{MS}$</td>
<td>Wage of medium skilled labor</td>
</tr>
<tr>
<td>$w_{HS}$</td>
<td>Wage of high skilled labor</td>
</tr>
<tr>
<td>$w_{II}$</td>
<td>Prices of intermediate inputs</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Fixed input and output quantities</th>
<th>Description</th>
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<tbody>
<tr>
<td>$K$</td>
<td>Capital</td>
</tr>
<tr>
<td>$Y$</td>
<td>Gross output</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Offshoring and domestic outsourcing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$O$</td>
<td>Offshoring</td>
</tr>
<tr>
<td>$DO$</td>
<td>Domestic outsourcing</td>
</tr>
</tbody>
</table>
Developing Intelligent Decision Support Systems in Multi-Criteria Problems of Administrative-Territorial Formations Infrastructure Projects Assessment

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Abstract:  
The article proposes a new methodology for multi-criteria assessment of the alternatives and presents the technology for implementing this methodology in decision-support web services for the purpose of ranking and optimizing to improve transport infrastructure in the administrative-territorial formations. The proposed methodology for constructing the hybrid preference function enables to take into account the inter-criteria preference dependency, to achieve the required accuracy, it includes a stepwise procedure for entering and editing preferences. The methodology is invariant with respect to the subject domain. Along with infrastructure projects, it was used to solve the problems of ranking applications for space experiments. As exemplified by solving the task of selecting infrastructure projects with limited financial resources the article shows the use of a software implementation of the hybrid methodology in the web-service decision support system (WS-DSS).

Keywords: decision support; vectorial criterion; infrastructure projects; administrative-territorial formation; hybrid preference function.

JEL Classification: O18; O21; O25; P21

Introduction

The proposed methodology implies that a decision maker (DM) sets non-intersecting domains in the criteria space. A certain level of preferences is indicated for these domains. Next, a set of the criteria space cells, which do not intersect with the domains specified by the DM, will automatically be formed. Based on Pareto dominance and a number of other methods for determining dominance, preferences are defined between the domains set out by the DM and the cells that were determined automatically. Then an oriented graph is formed. The vertices of the given graph correspond to cells and domains, and the arcs correspond to the relation of preference between them. At the next stage, the graph is analyzed according to the individual preference levels. In practice, several non-dominant alternatives can often fall into one cell or domain. In this case, it is difficult to compare them; therefore, it is suggested either to divide the given domain into smaller ones, or to apply a quantitative method for comparison within the boundaries of the domain under consideration.
Conclusion

The majority of the routine methods for solving high-dimensional problems fail to take into account inter-criteria preference dependency. However, the proposed methodology for the formation of hybrid preference function includes algorithms for determining the DM's value system for a high-dimensional criterion and takes into account the preference dependency.

The creators of new methods and approaches investigate, as a rule, either qualitative or quantitative criteria. The presence of heterogeneous criteria forces them to translate quantitative criteria into qualitative ones by discretizing them or qualitative criteria into quantitative ones by attributing numerical estimates. Unlike other approaches, the hybrid methodology is invariant with respect to the subject domain. It enabled to solve a wide range of problems associated with a multi-criteria assessment by a high-dimensional criterion consisting of qualitative (lexical) and quantitative (numerical) components.

Many applied information systems contain methods of decision-making theory; however, the method is ‘hard’ implemented by the developer of the system and does not contain a procedure for selecting both the method itself and its parameters. The work offers to integrate WS-DSS Web services in the applied information systems for multi-criteria analysis of alternatives. The choice of methods and value system in this approach remains with the user, not with the system designer. This approach allows solving the task of selecting infrastructure projects in conditions of limited financial resources.

The implementation of the proposed method of constructing the hybrid preference function in the ATF will ensure the improvement of the socio-economic status of their inhabitants

Acknowledgements

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Social Media, Corporate Website and its Impact on Consumer Purchasing Decisions

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Suggested Citation:

Abstract:
Successful marketing communication is rooted in the knowledge of customers, competitors, colleagues and the ability of a business entity to generate profit. Marketing innovations directly related to the modern-day phenomenon – the Internet. The article deals with the Internet marketing and the selected social media from the point of view of consumers living in the region of Eastern Slovakia. The aim of the research is to analyse the existence of differences in the impact of advertising on the basis of the consumer’s family and to determine the credibility of the website and its presentation on Facebook. The Student’s t-test method for independent samples and the Pearson correlation coefficient were used to find the differences. The results of the research indicate that there is no statistical significance between the respondents’ group and the extent of the advertising impact. The presumed fact that the presence of a web site, or more precisely the E-shop, on social networks can be to a certain extent a competitive advantage of each company, has not been confirmed in the research. From the conclusion we assume that not all current consumers are affected by social network advertising. The submitted contribution can serve as a support tool for social networking marketers as well as for the professional public who is looking at the Internet marketing and social networking from the consumer’s point of view.

Keywords: advertising; internet; social networks; consumer

JEL Classification: M31; M37; M39

Introduction

The increasing intensity of competition, globalization and the emergence of a united European market, which we are a part of as an EU member state, and from 1 January 2009 the entrance into the euro area, increase the requirements for the competition not only in the domestic and European markets, but also in the world (Ziaullah et al. 2014, Jangl 2016). It gradually expands the traditional understanding of marketing to its modern perception in relation to customers, business partners and the surrounding world (Baroniené, Žirgutis 2017).

Recently, there have been fundamental changes in the Slovenian Internet business, which have also been significantly affected by globalization. Foreign products and services are continuously entering the Slovak market. The vast majority of Slovak businesses use Internet marketing as well as social media and website promotion. Since 1990, the Internet has provided us just basic functions such as emails, searching online and general purpose.
Nowadays, it plays an important role in human interaction and enables the connection between the traditional media such as film, television, music and the phone. Internet users have the ability to connect from anywhere via any device. Access to new digital technologies and websites has accelerated other forms of human interaction through online forums, news and social media. Email was originally the core of everything. However, the rise of social networks, especially the Facebook social network has changed the concept for online communication and has combined personal and public space on the Internet. Facebook has monthly 1.2 million active users, which means it is more than 50% of the Internet users worldwide. Several authors De Pelsmacker et al. (2013), Kotler et al. (2007), Remeikiene et al. (2017), Kotler and Keller (20070, Dahl et al. (2003) and Chafey and Chadwick (2012) point out that the social networking sites enable users to connect by creating personal profiles, inviting friends to access those profiles, sending e-mails and instant messages between each other. These personal profiles can include photos, video, audio files, blogs, link to websites, in fact any type of information. Consumer behavior on the Web has been the subject of considerable research in the last few years, but understanding it is made difficult by the fact that the main entities involved, consumers and businesses, have been transformed (Machová et al. 2014, Koufaris 2002). It is clear that this area influences many aspects of the current online and offline business (Kozubíková et al. 2015). Despite that we can say that electronic trading has its special features and differences. Everybody who wants to enter the network world in order to offer their products and services there must be aware of the distinctive approach, count on it and adapt to it. The results show that motives of online shopping behavior are independent on age of respondents. Motives in each age group are the same and marketers do not have to select motives of online shopping according to age of respondents. (Svatošová 2013).
Conclusion

In the beginning of our research, we have focused on the time they spend on the Internet every day after finding out all the basic demographic and social data of the respondents. Only a small group of respondents spend on the Internet less than an hour per day. On the contrary, today's population spend more and more time on the Internet. This trend assures us that any organization or company which wants to gain a competitive privilege on its market should not forget about the internet marketing. The results of the research point to the fact that respondents, when they have to choose the most effective ads, most often they did not choose the traditional ways to promote TV, radio and print advertising.

Social networks were the kind of advertising that occurred most often in respondents' replies. Social networks on the Internet are undoubtedly growing and becoming more and more popular. As social networks are growing and creating new social networks, the opportunities for advertising in this environment are increasing. This form of presentation of the company on the Internet is possible even without the existence of a website, which can be replaced by a Facebook page. In the case of an online store, it works only on Facebook. The good name of the company and the website itself is built with the satisfaction of every single customer. It is the whole process of running the e-shop as such. The basics are the correctness and timeliness of the information about the products offered, the time of the delivery and the published price. The other significant attributes of the website were also its intelligibility and clarity. In practice, this means that an e-shop visitor should be oriented on the page without any problems, and in a relatively short time with the filtering should be able to find what he needs at the moment. It can be speeded up by a filter that can be set and sorted for products such as price, brand, colour, size and other parameters. In this context, they are somewhat harassing pop-up ads and banners. If there are a lot of advertisements placed on the web page, the visitor leaves the e-shop.

Apart from being visible on the Internet each business entity should be aware of what the Internet has to offer. Online world has changed the already-existing marketing models and brought strategies that can be applied with much greater overall effect than basic types of advertising. Knowledge of terms such as PPC, SEO and personalization of consumer goes hand in hand with success. The results indicate that on the Internet it does not matter whether a consumer is a woman or man or where he/she lives. Advertising affects both men and women, those living in big cities as well as those in small villages. One of the research hypotheses confirmed the relationship between the trustworthiness of business entity’s website and its presentation on Facebook. Our research indicates that marketing activities should also include online activities since they open up new possibilities and offer new ways of achieving one’s objective.

Acknowledgments

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References


Assumptions on Innovation into a Circular Economy

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Abstract:
Nowadays innovation in any field is essential for sustainable development, having in mind the actual trend to circular economy. Even that 40% of innovative products fail if the market is not able to understand and adopt the innovation, causing resource losses used for research, design, development and product promotion. It is also obvious that the development of mobile technologies and the extension of internet all over the world determine another trend: the second life on social media of the new Z generation. Having in mind these assumptions this research focus on finding out which are possible tools that can be useful in decreasing the rate of failure of innovative products on the market. Within smesonline.eu project we developed a virtual business environment that promotes circular economy principles. The project promotes the open source technologies and social media communication advantages in obtaining sustainable development. The article case study shows how to use different technologies (Java Servlets and MySQL) in order to develop a web business solution from scratch with virtually no costs. Single.

Keywords: circular economy; innovation; IoT; IIoT; SM; virtual reality; 4th Industrial Revolution

JEL Classification: D87; I31; M21; M31; O13; O30

Introduction

The article aim is to discover appropriate tools for sustaining the innovation and mitigating the risk of failure. The article start hypothesis is that some of the factors that cause the innovation failure are: expensive technologies, lack of communication regarding the new added value of innovation. Thus the article emphasizes the advantages of using open source technologies, virtual and augmented reality advantages and social media communication. The smesonline.eu project inspires a business ecosystem for sustainable development. As an example the case study present a small web business solution developed from scratch using free open technologies (Java Servlets & MySQL).
Conclusion

The world is changing very fast on behalf of technology. The article is a pleading for using the benefits of technology in scope of a better future for humankind. The article postulate the idea that innovation, good preservation of environment, sustainable development through circular economy, mass communication and human behavior change, can provide a better future for the next generations. The smesonline.eu project inspires a business ecosystem for sustainable development and the case study is an example of how to use free open technologies (Java Servlets & MySQL) as to get high functionality for a web business solution.

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Analysis of Russian Companies’ Practice of Marketing Orientation

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Suggested Citation:

Abstract:

**Background:** The article aims to study the certain aspects of marketing activities in Russian companies and to classify companies according to the proposed factors affecting the marketing orientation.

**Objectives:** To reveal factors that describe marketing orientation of Russian companies, to assess their attitudes and to classify Russian companies according to various directions of marketing orientation.

**Method:** Classification of Russian companies consisted of 28 quantitative variables that described the attitude of the representatives of companies to various aspects of marketing environment. Attitudes were identified through personal interviews of representatives of 116 Moscow region companies. The principal component method and hierarchical cluster analysis were used as analytical methods.

**Findings:** We identified four clusters of enterprises after determining eight factors which characterized 69.7% of the variance of the initial data. We considered these clusters and established key differences between them.

**Limitations of the research:** The sample size and the geography of the research stem from the specifics of the search study regarding its methodology and extension of the geography of the survey.

**Value and originality of the research:** We revealed a previously unused classification criterion for the company marketing orientation – the geographical representation of the business which determines the differentiation of marketing activities.

**Keywords:** marketing orientation; factors of marketing environment; marketing performance; classification of Russian enterprises; method of principal components; cluster analysis.

**JEL Classification:** D40 ; D42 ; D47

**Introduction**

The role marketing orientation plays in business strategy has been widely discussed since the moment the concept of marketing was developed. Marketing has established itself as a key aspect of the company’s activities (Becher, Halsted 2001). In addition to that, as theoretical and practical aspects of a company performance show, marketing orientation contributes to the formation of a sustainable competitive advantage (Porter 2006).

Marketing orientation has been evolving with the time: it has shifted its focus from the product to sales and consumer needs, and then to building long-term relationships with customers. Strong marketing orientation implies both financial and non-financial benefits for companies (Lingsa and Greenleyb 2009). Marketing orientation refers to a culture where a company generates excellent value for its consumers, focusing on consumer needs and long-term profitability (Narver and Slater 1990). Marketing orientation is directly linked to several areas of the company’s strategy and its activities (Ejdsy 2015). It is associated with such outcomes as creation of a sustainable competitive advantage (Narver and Slater 1990, Pelham and Wilson 1996), profitability (Narver and Slater 1990), new
innovative products (Lukas and Ferrell 2000), and overall efficiency of the performance (Slater and Narver 1994). The concept of marketing orientation was also considered and studied by Russian researchers and marketing experts. We have thoroughly examined all these papers and identified prospects for further research and study of the marketing orientation of Russian and foreign companies that account for dynamic changes in market conditions depending on the scale of company activities in different regions of Russia.
Conclusion

One of the main marketing postulates states that all marketing tools are not only interrelated, but also interchangeable. In different conditions (the type and features of the market, the geography of the company business, the degree of innovation, the level and strength of the competitive impact, the potential of product differentiation, price sensitivity of demand, resources and competencies of the company, etc.), the degree of the company’s marketing orientation can be significantly different. What is more, the effectiveness of marketing tools used in various situations also differs.

Previously, numerous studies considered how strong the marketing orientation of a company is depending on the specifics of the business. At the same time, it is important not only to reveal the degree of the marketing orientation, but also to understand how the type of marketing orientation varies depending on the industry, the company geography, the size of the company, and other factors that influence the changes in and adaptation of the marketing orientation.

In this study, we identified 28 primary factors of marketing orientation, then using statistical analysis, we established 8 synthetic factors that had the greatest impact on the marketing orientation of companies. After conducted cluster analysis, we obtained four clusters of companies, three of which can be considered significant. These clusters were given the following names: Cluster 1 - flagships; Cluster 2 - communicators; Cluster 3 - chameleons.

As the research showed, Russian companies also have priorities in choosing the main direction of marketing tools effect – they can be primarily targeted at consumers, vendors, or intermediaries. Russian companies differ significantly not only according how fully their marketing activities are developed (Musatov and Musatova 2016), but also regarding its focus on various objects of the marketing microenvironment (customers, intermediaries, partners) and to what extent they account for macro-environment factors.

Eight synthetic factors identified by us in the course of the research can be used as the basis for studying various aspects of marketing activities of companies operating in different regions of Russia.

The study proved that it is viable to expand the number of elements of the existing Narver-Slater marketing orientation model by including factors that account for changes in the external environment (micro and macro). Marketing orientation, according to various researchers and the authors of this study, should be considered as a source of competitive advantage and business sustainability in the turbulent market environment. Detailed study and analysis of its influence in various sectors or depending on the company size and the market type should become issues for further research.

The research findings make it possible to assess the application of marketing orientation by Russian companies, as well as the formation of several common approaches to its implementation. These findings are consistent with the results of studies on marketing orientation conducted in different countries, but they have their own specifics the dynamics of which can become subject for further investigation.

This methodology can be applied by network business management companies or individual enterprises to assess the marketing orientation of business units or small and medium-sized businesses separately.

The findings can be applied in Russian enterprises when developing strategies for entering the Moscow market – the most attractive regional market in Russia, as well as in international companies that intend to create or expand their business in Russia.

References


The Predictable Market and Mutual Fund’s Superior Performance. The Evidence from the Higher Moment Method

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Abstract:
In this study, we inspected the market timing ability and stock selectivity of mutual fund in a high volatile market - emerging market. The high level of volatility - risk, mean and variance approach are not sufficient to estimate the portfolio risk and return. To match the model with the environment of high risk and high return, we apply the coskewness risk factor - which is an unavoidable skewness risk, as another important risk in emerging market study. Our finding showed that the factor effectively supports the market timing ability of mutual fund manager in Thai market. The outcome further supports the prior belief that the return in emerging markets are more predictable than the developed market. Therefore, we examine the positive and significant market timing ability in all portfolio regardless their performance. We discover that the mutual fund manager prefers the positive skewness, particularly the poor performance-fund.

Keywords: mutual fund performance; timing ability; coskewness; higher moment

JEL Classification: G11; G12; G21; G23

Introduction
The expansion of the mutual fund industry worldwide was contributed to the various benefits provided by a mutual fund comparing with the individual investment. For example, the individual investors could invest in a well-diversified portfolio at a cheaper cost by investing in a mutual fund. Mutual funds Industry also have a lower transaction cost comparing to the individual investor. Besides, the funds are highly regulated in most markets. However, one big advantage to invest in mutual fund is that mutual funds are managed by the high experience and very professional fund managers.

Traditionally, there are two superior abilities of mutual fund managers. The first one is the ability to manage idiosyncratic risks. Mutual fund managers are believed to have the ability to select an undervalue stock. Therefore, the managers who have this superior ability can create the higher fund’s abnormal return. To measure a stock selectivity, Jensen (1968) offered a model to capture fund’s alpha which is called Jensen’s alpha. The other superior ability is a market timing which is an ability of fund managers to forecast the market movement - the market return. If the mutual fund managers are able to correctly predict the market movement, they will allocate their investment to the market before the market rise. Consequently, they create the higher fund’s return. In order to capture this market timing ability, the traditional model was suggested by Treynor and Mazuy in 1966 and furthered developed by Roy D. Henriksson in 1984. Furthermore, the market volatility has been discovered to be other useful source of information to adjust the mutual fund portfolio since the market volatility is more persist than the market return. Additional, Busses (1999) suggested that the mutual fund managers use information obtained from the market volatility rather than the information from the market return.

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7 Nakhon Pathom 73170
He also documented the evidence of market volatility timing gather from the daily market return. Prior literature reveals mixed evidence of the selectivity and timing ability of funds.

The prior studies are based on the mean and variance approach. In this study a mean-variance approach is not sufficient to characterize risk and return. Since the utility function of risk averse investor’s wealth—denoted as $U(W)$, is strictly increasing, $U'(W) > 0$, $U''(W) < 0$, and $U'''(W) > 0$. The function indicated that the risk averse investor was able to have a positive skewness preference. As the result, the higher moment, a skewness, is one of significant risk factor in asset pricing. The skewness becomes necessary risk factor particularly in emerging market study. Because emerging market are characterized by the high volatility and high return which mean-variance approach is limited. Prior studies supported the important role of the skewness as an important risk factor. Furthermore, the skewness found to be one of systematic risk or unavoidance risk—coskewness. This coskewness is priced and plays a significant role in portfolio allocation (Moreno and Rodriguez 2009).

The skewness is not only a significant risk factor in emerging market, the emerging market study offered an opportunity to discover the mutual fund’s performance for several reason. Firstly, the studies of emerging markets have important contributions. They were demonstrated the significant economic expansion are in both economics and saving. A rapidly growth contribute the expansion to an increasing of global economic share.

Secondly, there is the evidence of serial correlation of return in emerging market. Comparing with the develop markets, the return in emerging markets are more likely to forecast. Although the results of market timing ability were inconclusive in developed markets, we expected that high performance funds could predict the return and could create the abnormal performance. Thirdly, the return distribution in emerging markets were discovered to be a non-normally distributed. This is because the emerging markets are characterized the incomplete market structure, high economic uncertainties, low transparency, political instability, regulatory changes, financial market liberation and so on. As a result, the study showed an important role of skewness as an important risk factor which was ignored by prior studies.

To further scrutinize the mutual fund manager’s superior performance in emerging market, we focused our study on Thai market. This is because Thailand is one of the important emerging markets in the South East Asia and has exhibited a rapid economic expansion over last decade. In addition, Thai mutual fund industry has impressively expanded at an average 28.91% per year8.

The remainder of the study organizes as follows, Section 2, provided a brief overview of literature. Section 3 discusses data and methodology used in this study. Section 4 provides the result and discussion of our finding, and the last section is conclusion and summary.

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8 Sources: Morningstar Direct database, as of Jan 2017.
Conclusion

This study examines the relationship between productivity growth (RGDP) and labour market performance in Nigeria. The metrics used for labour market performance are wages (RW) and employment (E). Empirical studies have shown that impact of productivity on wages and employment varies both in developed and developing economies. This study uses autoregressive distributed lag (ARDL) as analytical tool. The augmented dickey-fuller and Philips-Perron technique were used in testing the unit root properties of the series. The unit root tests show that all the series used are non-stationary at 5% level of significance except the interest rate. However, the non-stationary attained stationary after the first difference. The study specified the Error Correction Model (ECM) to capture both the short-run and long-run dynamics; the associated ECM model takes a sufficient number of lags to capture the data generating process to the specified framework using Hannan-Quinn Criterion. This is necessary to prevent Gaussian error in the ARDL model.

The results from the auto-regressive distributed lag (ARDL) revealed that using the RGDP, E and RW as dependent variable, there is an existence of long run relationship between the variables. Convergence in the long-run equilibrium using E and RW as dependent variables was noted while divergence was noted using RGDP as dependent variable. The sign of relationship between output and employment is negative and vice-versa both in the short and long-run. From the ARDL results the influence of the value of wages is not statistically significant both in the short run and long run. It has been observed in literature that the most direct mechanism by which productivity affects living standards is through real wages. Series of tests was also done to ensure the stability of the data and models respectively. The economic implication of the result is that minimal or no impact has been observed in promoting the wages in adjusting to reflect the cost of living and also, the output growth does not translate into employment gains both in the short and long run.

Based on the findings, it can be concluded that Nigerian government should focus on long term goals especially in trying to promote employment opportunities and increasing level of income. The following suggestions are given: the government should focus on long run policies for employment and wages and also ensure consistency between the policies in order to avoid the complication that occurs as a result of inconsistency in policy making. So there might be need for the government to develop an institutional framework that will ensure this; Government should create appropriate enabling environment to promote a sustained effective aggregate demand in order to maintain the required level of domestic production through targeting variable such as interest rate. Government should aim to integrate employment and wages into the growth system both in the short and long run through their policies; the Government should also be able to maintain competitive and favourable real exchange and interest. Finally, Government should deliberately promote labour-intensive method of production in order to generate more employment particularly in the real sector.

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Economic Growth Quality of Metallurgical Industry in Russia

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Suggested Citation:

Abstract:
The author researched the empirical assessment of sustainable economic growth of the metallurgical industry in Russia. We systemized the main approaches to the sustainable growth assessment. We offered the evaluation algorithm, based on the objective quantitative statistical data. The advantages of the method are availability of indicators, simplicity and complexity of assessment, the implementation possibility of these tools for any industries and complexes. The results of the research reveal the low quality (unsustainability) of the economic growth of the Russian metallurgical complex, which is due to both macroeconomic shocks and the multi-vector strategies of the industry. We found out that the Russian metallurgy is currently in the situation of 'catching up growth'.

Keywords: sustainable development; growth quality; industrial management; metallurgical industry; institutional environment

JEL Classification: O11; O47; L61

Introduction

The achievement of economic growth, its determinant and patterns is one of the key but poorly studied problems of market development and its individual subjects. Most economic schools focus on macroeconomic growth. But we can interpret growth as "the process of aggregating individual decisions and results at the micro level" (Sandler 2006, 324). At the same time, the strategies and decisions, made at the micro level, derive from the parameters of the institutional environment, innovative externalities and many other factors of the external environment (Khotinskaya 2015, 12) Global and regional economic changes determine the need to transform the mechanisms for the sustainable development of industries, shift the goals of companies from maximizing profits to finding strategies, oriented toward their continued existence on the market.

The object of the research is the metallurgical complex, including the industries of ferrous and nonferrous metallurgy. The importance of the industry for the Russian and world economy is impossible to overestimate. The share of metallurgy in the country's industrial production is about 15% (Federal State Statistics Service). Metallurgical enterprises consume 28% of the world's electricity, more than 5% of natural gas and their share in freight rail traffic is 23% (Steel Association).

We chose the object on purpose. The reforming experience of the industry is great interest. On the one hand, the activities specificity of enterprises of traditional heavy industries significantly complicates the use of flexible, dynamic business models, i.e., it limits the choice of sources for sustainable growth. The sustainable development of such enterprises is usually due to their resources, mainly, production technologies and physical assets.

On the other hand, in 2014 the adoption of Law No. 488 "On Industrial Policy" gave a powerful impetus to the change in the vector of Russian industrial policy. The need for a new industrialization, which is a synchronous process for the creation of new high-tech sectors of the economy, an effective innovation upgrade of its traditional sectors, with agreed qualitative and consistent changes between the technical, economic and socio-institutional spheres (Romanova 2014, 46). This fact also predetermines the relevance of the study.

The modern Russian metallurgy formed itself under the influence of three major processes. (Budanov 2015) Firstly, in the 1990s, Russia exported a great number of domestic resources. Secondly, in the 2000s, metallurgy underwent significant institutional changes. In order to reduce transaction costs, large management companies started. They now comprise almost 100% production of aluminum, titanium, nickel and about 80% production of cast iron and steel in the Russian Federation. After that, domestic integrated companies attempted to create
transnational corporations, optimizing the production and supply of metals to foreign markets. Thirdly, in the late 2000s there was an attempt to strengthen inter-branch relations on the supply of metals inside the country. Pipe companies achieved the greatest success because they focused on the needs of the fuel and energy sector, as well as manufacturers of bulk types of metal products used in construction.

These steps, according to Budanov (2015, 108) allowed the Russian metallurgy to adapt successfully to the conditions of the global market and the specifics of the domestic economy. In the 2000s, it was able to restore pre-crisis production volumes of the 1980s, to play a significant role in the world market.

But the effectiveness of the industry significantly worsened in the 2010s. This is due to financial difficulties and production technological level of some large companies, as well as with a high attraction of imported materials and components of the domestic metal turnover system. At the same time, the economic departments and the non-governmental mass media report on the successful and sustainable growth of metallurgy. The finding out of the actual state of the industry, sources and quality (sustainability) of its economic growth are the tasks of this research.
Conclusion

Thus, the current state of the industry possesses a low quality, an orientation toward a momentary financial result, weak controllability due to constant adjustment to macroeconomic conditions without taking into account available resources and a clear strategy. Despite the whole list of programs and scenarios for the development of metallurgy throughout the latest economic history of Russia, we should note that the Russian industry is weakly manageable, subject to the global crisis much more than institutional reforms and industrial policies.

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## APPENDIX 1

Dynamics of the main indicators of efficiency (effectiveness of resource use) of metallurgy in Russian Federation (2005-2015)

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Use of production capacity, %</td>
<td>81.75</td>
<td>85.50</td>
<td>86.75</td>
<td>79.75</td>
<td>58.00</td>
<td>81.25</td>
<td>81.50</td>
<td>80.50</td>
<td>81.00</td>
<td>83.25</td>
<td>82.00</td>
</tr>
<tr>
<td>Fixed assets, bln. rub.</td>
<td>692</td>
<td>812</td>
<td>953</td>
<td>1120</td>
<td>1285</td>
<td>1426</td>
<td>1600</td>
<td>1796</td>
<td>2110</td>
<td>2421</td>
<td>2616</td>
</tr>
<tr>
<td>Depreciation of fixed assets, %</td>
<td>45.0</td>
<td>41.7</td>
<td>40.8</td>
<td>40.2</td>
<td>38.2</td>
<td>39.2</td>
<td>40.9</td>
<td>42.1</td>
<td>43.7</td>
<td>44.1</td>
<td>46.6</td>
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<tr>
<td>Renewal coefficient of fixed assets, %</td>
<td>12.6</td>
<td>16.6</td>
<td>14.7</td>
<td>14.8</td>
<td>17.4</td>
<td>11.6</td>
<td>11.3</td>
<td>12.4</td>
<td>11.9</td>
<td>10.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Retirement coefficient of fixed assets, %</td>
<td>1.2</td>
<td>1.2</td>
<td>1.1</td>
<td>1.0</td>
<td>0.9</td>
<td>0.8</td>
<td>0.8</td>
<td>0.9</td>
<td>0.9</td>
<td>1.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Specific weight of completely depreciated fixed assets, %</td>
<td>15.5</td>
<td>12.9</td>
<td>11.6</td>
<td>12.6</td>
<td>11.9</td>
<td>11.4</td>
<td>11.6</td>
<td>13.6</td>
<td>13.2</td>
<td>13.0</td>
<td>15.2</td>
</tr>
<tr>
<td>Physical volume index of investments in fixed assets, % to previous year</td>
<td>120.1</td>
<td>117.5</td>
<td>100.0</td>
<td>118.2</td>
<td>79.6</td>
<td>85.9</td>
<td>104.9</td>
<td>102.1</td>
<td>92.1</td>
<td>96.1</td>
<td>97.3</td>
</tr>
<tr>
<td>Capital productivity</td>
<td>2.62</td>
<td>2.89</td>
<td>2.97</td>
<td>2.86</td>
<td>1.80</td>
<td>2.24</td>
<td>2.40</td>
<td>2.14</td>
<td>1.83</td>
<td>1.79</td>
<td>2.05</td>
</tr>
<tr>
<td>Capital ratio</td>
<td>0.38</td>
<td>0.35</td>
<td>0.34</td>
<td>0.35</td>
<td>0.56</td>
<td>0.45</td>
<td>0.42</td>
<td>0.47</td>
<td>0.55</td>
<td>0.56</td>
<td>0.49</td>
</tr>
<tr>
<td>Ratio of tangible assets and number of employees, million rubles / person</td>
<td>0.57</td>
<td>0.69</td>
<td>0.83</td>
<td>0.99</td>
<td>1.29</td>
<td>1.47</td>
<td>1.60</td>
<td>1.81</td>
<td>2.13</td>
<td>2.54</td>
<td>2.83</td>
</tr>
<tr>
<td>Current assets, bln. rub.</td>
<td>834</td>
<td>1002</td>
<td>1348</td>
<td>1745</td>
<td>1670</td>
<td>1804</td>
<td>1914</td>
<td>2094</td>
<td>2230</td>
<td>2925</td>
<td>3568</td>
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### Indicators of human capital use

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</thead>
<tbody>
<tr>
<td>Advancing of growth in the number of employed in relation to growth in shipment of products</td>
<td>1.04</td>
<td>1.14</td>
<td>1.06</td>
<td>1.00</td>
<td>0.97</td>
<td>1.16</td>
<td>1.04</td>
<td>1.05</td>
<td>1.00</td>
<td>1.05</td>
<td>0.96</td>
</tr>
<tr>
<td>Labor productivity, million rubles / person.</td>
<td>1.49</td>
<td>2.00</td>
<td>2.46</td>
<td>2.83</td>
<td>2.31</td>
<td>3.29</td>
<td>3.84</td>
<td>3.86</td>
<td>3.89</td>
<td>4.54</td>
<td>5.78</td>
</tr>
<tr>
<td>Staff costs, bln. rub.</td>
<td>183.9</td>
<td>209.6</td>
<td>242.6</td>
<td>281.4</td>
<td>245.2</td>
<td>286.3</td>
<td>354.9</td>
<td>387.8</td>
<td>429.1</td>
<td>450.3</td>
<td>476.1</td>
</tr>
<tr>
<td>Profit per employee, million rubles / person</td>
<td>276.43</td>
<td>479.29</td>
<td>622.76</td>
<td>276.79</td>
<td>207.22</td>
<td>362.18</td>
<td>289.82</td>
<td>285.92</td>
<td>149.34</td>
<td>98.96</td>
<td>546.06</td>
</tr>
<tr>
<td>Specific weight of personnel costs in production costs</td>
<td>0.13</td>
<td>0.12</td>
<td>0.12</td>
<td>0.11</td>
<td>0.13</td>
<td>0.11</td>
<td>0.11</td>
<td>0.12</td>
<td>0.13</td>
<td>0.12</td>
<td>0.11</td>
</tr>
<tr>
<td>Average wage, thousands rubles/person</td>
<td>10.3</td>
<td>12.0</td>
<td>15.0</td>
<td>18.2</td>
<td>17.9</td>
<td>21.2</td>
<td>29.9</td>
<td>26.5</td>
<td>28.5</td>
<td>30.4</td>
<td>33.1</td>
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### Indicators of financial resources use

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</thead>
<tbody>
<tr>
<td>Turnover</td>
<td>2.17</td>
<td>2.34</td>
<td>2.10</td>
<td>1.83</td>
<td>1.38</td>
<td>1.77</td>
<td>2.00</td>
<td>1.83</td>
<td>1.73</td>
<td>1.48</td>
<td>1.50</td>
</tr>
<tr>
<td>Duration 1 turn, days</td>
<td>165.6</td>
<td>153.8</td>
<td>171.2</td>
<td>196.4</td>
<td>260.5</td>
<td>203.4</td>
<td>179.7</td>
<td>196.2</td>
<td>208.2</td>
<td>242.9</td>
<td>240.0</td>
</tr>
<tr>
<td>Coefficient of current liquidity</td>
<td>178.6</td>
<td>192.5</td>
<td>167.2</td>
<td>151.2</td>
<td>166.3</td>
<td>165.9</td>
<td>150.8</td>
<td>143.8</td>
<td>142.0</td>
<td>142.6</td>
<td>142.9</td>
</tr>
<tr>
<td>Coefficient of self-sufficiency</td>
<td>16.8</td>
<td>18.2</td>
<td>7.3</td>
<td>-6.5</td>
<td>-8.3</td>
<td>-6.8</td>
<td>-22.1</td>
<td>-28.7</td>
<td>-36.6</td>
<td>-40</td>
<td>-42.6</td>
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APPENDIX 2
Change in factorial productivity ($\Delta TFP$) of metallurgy in comparison with the previous year 2005-2015

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Deflator</td>
<td>105</td>
<td>132</td>
<td>138</td>
<td>149</td>
<td>155</td>
<td>190</td>
<td>199</td>
<td>192</td>
<td>187</td>
<td>214</td>
<td>240</td>
</tr>
<tr>
<td>Deflated revenue</td>
<td>1720</td>
<td>1783</td>
<td>2053</td>
<td>2142</td>
<td>1485</td>
<td>1678</td>
<td>1925</td>
<td>1999</td>
<td>2064</td>
<td>2026</td>
<td>2234</td>
</tr>
<tr>
<td>$\Delta Q$</td>
<td>0.0362</td>
<td>0.1405</td>
<td>0.0426</td>
<td>-0.3663</td>
<td>0.1225</td>
<td>0.1370</td>
<td>0.0377</td>
<td>0.0320</td>
<td>-0.0183</td>
<td>0.0976</td>
<td>-</td>
</tr>
<tr>
<td>Deflated value of fixed assets</td>
<td>657</td>
<td>617</td>
<td>690</td>
<td>750</td>
<td>827</td>
<td>750</td>
<td>803</td>
<td>934</td>
<td>1129</td>
<td>1132</td>
<td>1092</td>
</tr>
<tr>
<td>Deflated staff costs</td>
<td>174</td>
<td>168</td>
<td>231</td>
<td>260</td>
<td>236</td>
<td>234</td>
<td>339</td>
<td>402</td>
<td>441</td>
<td>393</td>
<td>425</td>
</tr>
<tr>
<td>Total value of factors of production (labor and capital)</td>
<td>831</td>
<td>785</td>
<td>921</td>
<td>1010</td>
<td>1062</td>
<td>983</td>
<td>1142</td>
<td>1336</td>
<td>1571</td>
<td>1525</td>
<td>1517</td>
</tr>
<tr>
<td>$\Delta F$</td>
<td>0.0567</td>
<td>0.1595</td>
<td>0.0927</td>
<td>0.0500</td>
<td>-0.0771</td>
<td>0.1497</td>
<td>0.1569</td>
<td>0.1617</td>
<td>-0.0296</td>
<td>-0.0053</td>
<td>-</td>
</tr>
<tr>
<td>The Tornquist Index ($\Delta TFP$)</td>
<td>0.0928</td>
<td>-0.0190</td>
<td>-0.0501</td>
<td>-0.4164</td>
<td>0.1996</td>
<td>-0.0126</td>
<td>-0.1192</td>
<td>-0.1297</td>
<td>0.0113</td>
<td>0.1029</td>
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</tr>
</tbody>
</table>

Influence of Monetary Policy on Economic Growth in Russia

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Suggested Citation:

Abstract:

Objective. The purpose of the study is to estimate the impact of the modern monetary policy of the Bank of Russia on economic growth in the country.

Methodology. The authors applied correlation and regression analysis, which allows constructing a regression equation with the values of independent variables (factors).

Findings. The paper analyzes the main indicators characterizing the effectiveness of monetary policy implementation in Russia in 2000-2016. The undertaken correlation and regression analysis of the impact of monetary policy tools on economic growth in Russia according to empirical evidence (2006-2016) revealed the dependence of GDP on funds of credit institutions on correspondent accounts at the Bank of Russia.

Application area. The obtained results can be used by the Central Bank of Russia in the development of the main directions of monetary policy and by the Ministry of Economic Development of the Russian Federation in preparing a forecast of socio-economic development in the long run.

Keywords: monetary policy; economic growth; transmission mechanism; gross domestic product

JEL Classification: R 11; L8; L 83; M 31

Introduction.

Problem statement

The economic policy of any country is aimed at stimulating economic growth, maintaining the pace of its development at a stable level. One of the main economic tools of the state, providing favourable conditions for the national economic growth, is monetary policy, which is an integral part of the national economic policy. The financial and economic crisis of 2008-2009 significantly changed the parameters of the development of the world economy: the pace of economic growth became more restrained; uncertainty increased significantly. So, in 2009-2015 the average annual growth rate of the world economy was about 3.5%, and in Russia – less than 1%. According to the IMF forecasts, in 2017 growth rates in China are expected at 6.5%, in the US – 2.3%, in the EU – 1.6%, in Russia – 1.1%, the Brazilian economy will decrease by 3.8%, and the largest growth rate in developing countries are projected in India – 7.2% (IMF 2017).
Simultaneously with the low growth rates of the economy, in most countries there is an increase in public debt and overheating in the stock markets amid negative interest rates of many financial instruments. The current economic situation has actualized the problem of assessing the impact of monetary policy on the economic growth rate in various countries of the world (Chen et al. 2017, Georgiadis and Mehl 2016, Anowor and Okorie 2016, Glazyev 2014, Goryunov et al. 2015, Gudmundsson 2017, Davis and Presno 2017, Drobyshevsky et al. 2016, Lopez-Buenache 2017, Moiseyev and Pantina 2016, Mishkin 2017, Sokolova 2015).

**Scientific hypothesis**

Monetary policy instruments play a key role in stimulating economic growth in the country. In the next paragraph, we summarize the main trends in scientific literature on the impact of monetary policy on economic growth.
Conclusion

Currently, the implementation of monetary policy in Russia is carried out under the influence of both a number of negative external factors (deterioration of the situation in the leading commodity markets, a reduction in the volume of export earnings, capital outflows, technological and financial sanctions of Western partners, etc.) and internal factors (structural disproportions in the economy, de-industrialization of productive forces, dependence on imports in the basic sectors of the economy, etc.) that do not allow the Russian economy to fully utilize potential for economic growth. The current monetary policy of the Bank of Russia does not fully provide the conditions for stimulating economic growth. During the period under analysis, interest and credit channels did not have a significant impact on the real sector of the national economy.

In this regard, the most important conditions for ensuring the rates of economic growth and improving the welfare of society are to reduce the vulnerability of the Russian economy to changing external conditions and to solve internal structural problems. They became evident not only during the economic recession that followed the fall in oil prices in 2014, but also in the decaying economic dynamics that preceded it (even with a favorable environment in world commodity markets). In conditions when the needs of the country's socioeconomic development are oriented towards achieving its growth and modernization of the economy, increase in the effectiveness of the instruments of the state’s monetary policy is of paramount importance.

References


Stock Market Performance and Macroeconomic Fundamentals in the Great Nation: A Study of Pool Mean Group

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Suggested Citation:

Abstract:
The study examines the influence of macroeconomic variables interest rate, economic growth, inflation and exchange rate on stock market performance in G7 countries over the period 1980-2015. We employ the estimating technique of Pooled mean group estimation (PMG) to reveal the short run and long run impact of explanatory variables on dependent variable. The study established that long run interest rate and GDP affect the stock market performance positively. Moreover, in short run all the variables are found to be statistically insignificant. The outcomes suggest formulating comprehensive and effective policies to ensure stable macro-economic environment for G7 countries.

Keywords: economic growth rate; interest rate; exchange rate; inflation rates and stock market

JEL Classification: F3; F4; G1; C5.

Introduction
Concerns over the performance of stock markets globally and in particular developed countries increased after the massive losses suffered by financial markets in the wake of the global financial crisis of 2007-2009. According to Fynn (2012) indicates that within 14 months, the market lost over $15 trillion in value and wealth triggering an economic decline in all major economies from which many have not fully recovered. The June 2013 year-to-date performance of the stock market in great nations indicates that only the US and Japan recorded double digit performance while Canada recorded negative at -0.42%. Italy was 2.57%, Netherlands, 2.91%, while Britain, Germany and France were all less than 10%, suggesting a decline for Canada and weak performances for the others apart from Japan and the US (Bespoke investment Group 2013). The trend continued in 2014 with slow growth in the great countries.

In 2015, reports show that US companies continue to face declining earnings. For instance, a report by CNBC in February 2016 indicates that declining earnings between October and December 2015 in the US show a third straight quarter of fall in companies' performances compared to the previous year for all S&P 500 firms. Such experience took place last in the US during the global financial crisis. While stocks appeared to rally in March, 2015,
the outlook was not encouraging. Specifically, growth projections by the IMF for 2016 fell to 3.4% from its 3.5% level in 2015 while Citi Bank in the US even projected lower rate at 2.7%. This suggests a slow economic recovery at the global level and it could have negative impacts on the economy of both developed and developing nations and through that influence stock market performance. This decline could be linked to slow growth and macroeconomic changes in inflation, exchange rate and interest rate in the US and other developed and emerging economies particularly China as shown in Figure 1.

Figure 1. Slow growth and macro-economic changes in inflation, exchange rate and interest rate in the US and other developed and emerging economies particularly China

In the US, reports indicate that at least 33 companies on the S&P Index issued negative earnings per share (EPS) guidance as at first quarter of 2016 while projection for the year is mixed (Elite Fund Managers 2016). Reports released by Hang Seng Investment indicate that uncertainties hang on the stock and investment climate in Europe. For instance, European equities faced massive sell-offs in the beginning of 2016 with the Europe Stoxx 600 price index falling by 7% in the first quarter. This is connected with variabilities in inflation, exchange rate and interest rate with slow growth, especially in big economies like Germany and uncertainties surrounding the proposed 2016 referendum on the European Union (EU) in the United Kingdom (UK). The weak outlook is also linked with the unstable macro-economic variables in China. In March 2016, Bloomberg reports that a GDP growth rate of 6.4% is expected from China 2016 compared to 10.1% in 2013 and above 18% level attained in 2010. Along with rising debt to GDP ratio, the report suggests that the Chinese economy would contribute far less than usual to global economic growth in 2016 and it could have further negative effects on stock performance in the industrial countries. In the UK, the economy was expected to grow faster in 2016 than other G7 members, but at a low rate of 2.2%, which further shows the trend in weak growth in the advanced economies. The weakness has already been reflected in stock performance with about $8 trillion wiped off from the global stock market value at the beginning of 2016 (Her Majesty Treasury (HMT) 2016). The foregoing shows that stock markets in the developed nations are undergoing stress while economic growth and macro-economic variables such as inflation, exchange rate and inflation remain unimpressive. Therefore, the need arises to determine which factors contribute to the losses being experienced in the stock markets and to determine if macroeconomic factors such as inflation, exchange rate and interest rate are contributing to the decline.
Sharif, Purohit and Pillai (2015) attribute changes in stock market performance to both internal and external factors in firms. The internal factors are endogenous and subject to company control while the external factors are exogenous and beyond organizational control. Among the external factors are the macroeconomic characteristics of a country’s economy. Khan et al. (2012) list variables such as gross domestic product (GDP), inflation, interest rates and exchange rates as likely factors that could influence stock market performance. Interest rates represent the cost of funds and it is applied to discount future cash flows in the financial markets. When interest rate rises, investment in stocks is expected to fall given that funds are moved to other assets with higher returns such as fixed deposits, treasury bills and savings certificates (Lobo 2000, Toraman and Basarir 2014). Interest rates could also be used to control inflation, which could hinder investment in stocks. Thus, Fama (1981) suggests a negative relationship between inflation and stock market performance.

Research indicates that inflation could have a dual effect on stock market performance (Patel 2012). First, inflation that arises from increase in money supply could cause lower stock prices as investors move away from stocks. On the other hand, it could also lead to rising stock price if expected dividends due to increased cash flow to firms (Barakat et al. 2016). Thus the ambiguous nature of this bidirectional causal relationship demands more investigation.

Similarly, Barakat et al. (2016) note that the relationship between exchange rate and stock prices remains unsettled. If a currency depreciates, it leads to the promotion of exports, which could favor industrial output for exports and boost the stock of firms in that sector.

However, depreciation could also lead to rise in the cost of imports with negative effects on import dependent firms and their stocks. Thus, the exact impact of exchange rate change remains unclear and may need further examination.
Conclusion

Stock markets are the institutions to generate funds for the investment projects in order to accelerate economic growth. The current study intends to examine the influence of macro-economic variables as interest rate, inflation, exchange rate and GDP on stock market performance in G7 countries for the period since 1985 to 2015. Interest rate in the G7 countries is showing downward trend and this low interest rate is found to have positive impact on the stock market performance. This shows there is an inverse relationship between interest rate and stock market performance which is consistent with the findings of previous researches.

Economic growth of G7 countries is also increasing although with slow pace. However, this increasing trend in economic growth showed positive association with the stock market performance. On contrary, the empirical findings of this study reveal the negative relationship between inflation and stock market performance in the developed countries of G7. Moreover, the exchange rate is also found to have negative impact on stock market performance. The findings encourage to policy makers in G7 countries to formulate prudent economic policies in order to have stable macroeconomic environment. The stable macroeconomic environment through stability in interest rate, inflation, exchange rate and economic growth can ensure the maximum benefits from stock markets of G7 countries. Particularly these developed economies need to tackle the downward trend of inflation that is negatively impacting the stock market performance and focus more interest rate and GDP growth stability.

References


Macroeconomic Factors’ Impact on the Volume of Household Savings in the Visegrad Four Countries

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Suggested Citation:

Abstract:
In the last decade the domestic financial environment was affected by a number of important factors that allowed increase of household indebtedness. From a macroeconomic perspective the Visegrad Four Group of countries belongs to the less indebted countries in the European Union, but tracking of the volume of savings showed the opposite effect. Submitted article evaluates development in household income, consumption, and savings in the V4 countries in 2005-2016. Impact of selected macroeconomic factors by multivariate panel regression analysis that solves linear relationship between savings and disposable income, gross domestic product, unemployment rate, and inflation rate, was evaluated. The analysis confirmed, that a statistically significant parameter of the model, and the most important determinants that have strongly positive impact in all the surveyed countries were inflation rate and unemployment rate. They had similar negative impact to modelling of the value of savings. Indicator increase by 1 percentage point caused decline in savings by 11.6743 units in case of unemployment and 12.5727 units in case of inflation.

Keywords: savings; household consumption; unemployment rate; macroeconomic factors

JEL Classification: E17; E21; E27

Introduction
The paper is concentrated on the macroeconomic integrating forecasting with use of predictive simulation and econometric estimation of a given variable into a standard moving average process (Dobrescu 2014). That is a linear algorithm with constant positive weights of distributed lags. The empirical search relates to the Visegrad Four countries data. Since the mid-nineties, the Central and Eastern Europe (CEE) has shown considerable economic dynamics. The cooperation of the Visegrad Four group of post-communist countries started in the February 1991 with the aim to harmonize activities and to shape cooperation and close contacts with the European institutions as well as to hold regular consultations on the matters of their security. It was established as a platform for countries of similar situation and similar economic, social and security problems (Brazova et al. 2013). Since its establishment the Visegrad Four Group (also known as the „Visegrad Four“ or simply the „V4“) of countries (Poland, Czech Republic, Slovakia and Hungary) have undergone remarkable economic transition.

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Conclusion

Households have in the current difficult economic situation complicated role, reconsidering their priorities in consumption and savings based on disposable income. Since the households represent basic units of the national economy, our task was to assess the development and relationship of volume of savings and macroeconomic determinants that affect it in ten years period. After application of linear type of panel regression analysis we concluded that in all the V4 countries was confirmed a strong positive impact of disposable income on the volume of household savings, so that the growth of disposable income as the only factor caused the increase of savings. All other determinants had a negative character. Gross domestic product and the unemployment rate were seen as important, but not a core determinant.

The inflation rate according to our results did not belong to important determinants in any observed country and it has showed a strongly negative character. There are several opportunities to expand performed analyses and thus to answer other important questions regarding the optimal volume of income, consumption and household savings. One of them is to extend the analysis by other methods of regression analysis (logarithmic-logit, probabilistic-probit) which would disclose any deviations of explanatory variables in individual observed time periods. The input factors, that affect the volume of savings and can affect the overall modelling structure of explaining variable-the savings, can be modified as well. It is questionable whether the expert discussions on future development trends and possible modifications of design of our determinants could reach consistency and general consensus.

Acknowledgement

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References


Peculiarities of Regional Development and Industrial Specialization of the Far East of Russia

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Abstract:
The article examines the specifics of the Russian Far East regional development for 2000-2015 periods, identifies the main sources of financing economic growth in its constituent territories, and estimates the production specialization of industries and its relationship with investments in fixed capital. The aim of the study is to identify the specifics of the regional development of the region and to assess its production specialization. Methods of system analysis, synthesis, structural analysis, dynamics and concretization methods are used. In general, the conclusion is made about the unbalanced development of the Russian Far East economy, as well as inefficient regional economic policy. Certain restrictions related to the lack of official information on the GRP structure by sources of income and final product and labor costs ratio in the regions for 2014-2015 are caused by calendar features of statistical data release by FSSS of Russia. Originality/scientific or practical values are in modified methodology for calculating localization indicator. Practical application of the obtained results is also possible in the formation of regional economic policy in the constituent territories of the Far East in terms of identifying the resources for financing investment in fixed capital, as well as in identifying long-range region specialization branches.

Keywords: regional development; industrial specialization; the Far East of Russia; gross regional product.

JEL Classification: O11; Q32; R11; R53

Introduction

The branch structure and dynamics of the Russian Far East development, was formed under the influence of state programs. Recently, this region is being paid with special attention to both from the state, which forms a new institutional environment for the balanced development of these territories, and from the large monopolies implementing their investment projects here. There is a change not only in the structure of the economy of the constituent territories of the Federation, but also changes in their production specialization, which is formed under the influence of large investment flows. As a result, the subject matter of the article is quite relevant and strategically important, and the results obtained can determine possible directions for the further development of the Russian Far East.

Hypothesis: the development of the Far East has occurred due to the increase in the predominantly state financing of investments since 2000, which in the course of 15 years allowed to achieve a two-fold increase of the Gross Regional Product (GRP) and to form a new production specialization of its constituent territories.
structural investment processes and change in the specialization of regions.

**Conclusion**

Summing up, it should be noted that among the regional features of the development of the economy of the Russian Far East, one can name a large resource potential and heterogeneity of economic growth for individual constituent territories. At the same time, the first part of the hypothesis of this study, which explains the development of the Russian Far East since 2000 "due to the increase in predominantly state financing of investments," was not fully confirmed. It was determined that the ongoing investment policy for the period under report 2000-2015, is associated with the increased role of self-financing of investments at the expense of enterprise funds, with a small increase in the share of budget financing and a decrease in the role of borrowed funds.

The estimation of production specialization with the help of localization coefficients confirmed the traditional for the Far Eastern Federal District types of economic activity - fishing, mining, and construction. At the same time, the second part of the proposed study hypothesis, in which investments allowed "to form a new production specialization of its constituent territori..." was not confirmed: directed investments did not form the specialization of the economy of the Far East of Russia for the considered period, and the weak dependence between the increase in investments in fixed capital and GRP confirms the inefficiency of the regional economic policy pursued in the investment sphere of the region.

**References**


The Influence of Decentralization with Autonomy Power, Decentralization with Authority Power, Factor Mobility, the Construction Cost Index, and Inflation Rate Toward Labor Absorption Rate. Implications toward Regional Inequity in Indonesia

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Suggested Citation:

Abstract:
This study to examine the influence of decentralization with autonomy power, decentralization with authority power, factor mobility, the construction cost index, and inflation rate toward labor absorption rate and its implication toward regional inequity in Indonesia. The research method used in this research is the library research, as a form of research that utilizes the tools available literature in the form of books, journals, data and other empirical studies. Cluster analysis in this study is used to classify regencies' regional inequity into two levels, namely low, and high regional inequity, also in economic growth in two levels, low, and high growth. Also the factor affecting such as decentralization with autonomy power, decentralization with authority power, mobility factor, construction cost index, and inflation rate in two levels (low, and high level). Based on the analysis, the result shows that decentralization with autonomy and authority power significantly effect to labor absorption. The highest value of decentralization, will decreasing the labor absorption rate. Vice versa, the lowest value of decentralization, will increasing the labor absorption rate. Labor absorption rate as mediation variable in relationship between decentralization with autonomy and authority power significantly to regional inequity. This means that the higher the Decentralization with Autonomy and Authority Power, with Labor Absorption Rate which the higher, the level of Regional Inequality will decrease.

Keywords: economic growth; regional inequity; autonomy power; authority power; cluster analysis

JEL Classification: C4; H1; O1; O4

Introduction

The decentralized system, generally, assures every possible autonomy for local governments in exploring sources of income and its allocation to the good of the people. The notion of decentralization itself should be interpreted and brought into practice carefully so then maintaining the harmony of politic, economy, and fiscal decentralization. Political decentralization essentially grants authority to the local government to carry out a policy, while the administrative decentralization or decentralized managerial provide clues to how the implementation of the transfer of authority of these functions. Fiscal decentralization then provide financing for the transfer of authority. Thus, fiscal decentralization is part of a larger design that consists of political decentralization, administrative decentralization, and fiscal decentralization which leads to the welfare of the people (economic decentralization).

Several studies suggest that the central government was failed in realizing the expected level of economic growth, poverty reduction, income distribution, and preparation of appropriate public services (Oates 1972). Although district are main providers of public services of the region, very few studies had been done on district's growing burden in decentralization era. The main reason of the lack of study in district level is due to the lack of data on district government which eventually encourages the writers to conduct the study of the relationship newly decentralized administration in regional level and how these changes affect the economic growth, and the imbalance among regions which is also a very important issue.
Conclusion

Based on the result and discussion, the conclusion of this research are follow. Decentralization with autonomy and authority power has positive and significant effect to economic growth, the higher value of decentralization with autonomy and authority power, will be lead the higher value of of economic growth. Economic growth has positive and significant effect to regional inequity, the higher value of economic growth, will be lead the lower value of regional inequity. Economic growth as mediation effect in relationship between decentralization of autonomy power and authority power toward regional inequity. It means that the lower the autonomy and authority power in the region, the lower the economic growth of the regencies, and will affect the higher the regional inequity of the regencies. In other hand, mobility factors, construction cost index, and inflation rate does not effect to economic growth and regional inequity.

Based on the conclusions of the research, then put forward some suggestions into the implications of the results of this study include (1). The results of this dissertation study reveals that there exists any space that enables fiscal decentralization to improve economic growth and repair regional inequity. Yet, local governments should be steadily alerted to the positive/negative effect for it only occurs in some cases. Thus, to achieve the optimum level, the appropriate economic environment is highly needed, which gives the researcher to suggest the revitalization of monetary competence of the region (2). Fiscal decentralization, despite giving impetus to economic growth area, but still has the potential to create imbalances between regions if the funds transfer policy experiencing distortion. It is advisable to use a standard formula without being distracted by the basic allocation and policy adjustments.

References


Competitiveness of the Tourism Cluster of Kazakhstan: Comparative Analysis of Key Indicators

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Abstract:
In the context of modernization of the Kazakhstan economy, tourism clusters have an objective opportunity to become not only a new driver of the growth, but also to provide a control on preservation and rational use of cultural and natural heritage. The main purpose of this article is a comparative analysis of key indicators of the tourism cluster development in Kazakhstan from 2007 to 2015 on the basis of secondary data of Travel & Tourism Competitiveness Report. The study is based on a combination of statistical data from international organizations and the results of company executives’ survey in the tourism industry. Competitive advantages and negative factors affecting the development of the tourism cluster were revealed based on this analysis. Necessary measures were proposed in the context of legal, institutional and financial mechanisms for ensuring sustainable and effective development of the Kazakhstan tourism cluster.

Keywords: tourism cluster; Kazakhstan's competitiveness; tourism infrastructure; human resources; tourism policy

JEL Classification: E2; L83; Z32

Introduction
Today clusters are dominated in the world economic map, i.e. a critical mass of unusual competitive success in a certain area, concentrated in one place (Kryvenko 2015). Cluster development of the regions and the various sectors of the economy provides a modern mechanism to improve the efficiency of economic activities. And in this regard, considering the continuous growth of the importance of tourism and its positive impact on world economy, the inclusion of domestic tourism clusters in global chains of cost will allow to significantly raise the level of economic growth of Kazakhstan due to increase in the international competitiveness of the enterprises which are a part of a cluster.

For the first time the need of cluster approach for development of the competitive Kazakhstan economy was discussed in 2004, when the Government of the Republic of Kazakhstan initiated the project “Kazakhstan’s Competitiveness: Roadmap Towards a Diversified Economy” (Porter 2005). According to this project, a tourism cluster is one of seven priority clusters in traditional economy sectors. As a result of this, a number of legislative acts and program documents was adopted for regulating the tourism activity, and it had a positive impact not only on development of the branch, but also favorably influenced the international image of the country.

In this regard, the analysis of the tourism cluster competitiveness in Kazakhstan at the level of a single tourist destination and at the level of business structures becomes very relevant and timely. Therefore, we offer to use data of the report on the tourism and travel competitiveness developed by the World Economic Forum for more exact idea of development of the cluster tourism industry in the Republic, and for the detailed review of the strengths and weaknesses of the tourism cluster for defining the priority directions and formation of tourism economic development policy.
Conclusion

On the basis of the foregoing analysis, we can draw a conclusion that tourism cluster competitiveness of Kazakhstan, despite negative results, increases gradually and there has been some progress. So, in 2015, Kazakhstan took the 85th position among 141 countries, having risen by three lines in comparison with 2013. Since 2007, we have improved its position in the two main subindices out of the three ones – in the context of the regulatory framework (10) and in the context of human, cultural and natural resources (15). Only 28 indicators out of 90 are allocated as competitive advantages of Kazakhstan.

However, today the available potential and opportunities are not used fully, and the influence of tourism on the economic growth of Kazakhstan is insignificant and made 1.6% of Kazakhstan GDP in 2015 (WTTC Economic Impact Report, 2016) that is a rather low indicator. However, tourism can give 3% of GDP by 2020 and create up to 300 thousand new jobs with a full government support (Concept of development of the tourism industry of the Republic of Kazakhstan till 2020, 2014). It is obvious that taking into account today's structural challenges, tourism can become a strategically important branch for Kazakhstan. In this regard, we believe it is appropriate to consider the following measures:

- to create special tourist zones with special legal and policy benefits in forest lands and protected natural areas (based on the successful example of Korea and India);
- to develop a complex of systematic measures to simplify existing procedures and rules for short-term entry into Kazakhstan with tourist purposes;
- to develop the tourism infrastructure through joint efforts of the government and private sector with diversification of main tourist natural and resort zones, to develop new destinations;
- to develop obligatory qualification requirements to the workers of the tourism industry who are directly rendering tourist services in the sphere of entrance and internal tourism;
- to form a positive attitude of local people towards tourists by means of distribution of information brochures, holding of special seminars and actions showing positive results from tourism development;
- to develop the especially protected natural territories and the state forest fund, taking into account the maximum preservation of natural and reserved fund, the protection of natural and cultural resources in partnership with local population.

Thus, today the tourism cluster of Kazakhstan is faced with a task not only to save the achieved results, but also to increase competitive advantages, improving legal, institutional and financial mechanisms promoting Kazakhstan to become a global tourist destination.

References


Typology of Coastal Zones in the European Part of Russia: Modern Particularities within the Trend of Cross-Border Clustering

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Abstract:

Coastal areas worldwide have the tendency to attract human activity, showing outstripping performance on a number of indicators. The transcendenec of coastal regions is generally observed in relation to the average values of national performance. These include the indication of competitive clusters located at the coastal zone. The current study addresses the issue of cross-border clustering in coastal areas of the European part of Russia. Article presents the results of an inventory of the existing and potential cross-border clusters in the coastal zones under study, providing typology criteria to their delimitation. It is established that cross-border clusters are mainly formed in export-oriented primary industries – fishing and primary processing of marine biological resources; extraction and transportation of oil, natural gas, wood and timber; manufacture and export of metals, mineral fertilizers, grain. The cross-border relations also take place in shipbuilding, pharmaceutical and chemical industry (e.g. Leningrad region), recreation and tourism (e.g. Kaliningrad region). Based on complex assessment of the natural, geographical, economic and demographic factors, the study resulted in the identification of the main types of coastal zones. It is shown that the intensity of clustering, its forms and mechanisms vary significantly both at macro- and meso-scale.

Keywords: coastal zone; coastal area; coastal region; cross-border cluster; European Russia.

JEL Classification: L14; L16; L26; O11; O18; P25

Introduction

Coastal zones are important areas of economic and social activity. Studies on socio-economic development of coastal regions indicate a concentration of a large part of the global population in such areas: as much as 37% of the population of the Earth is localized in the 100-km coastal zone, and up to 50% of the world population are situated in the 200-kilometer coastal zone (Cohen et al. 1997, Pak and Majd 2011). Vallega (1998) evaluates the localization of the coastal population up to 60% in the band of about 60 km. Gorkina (2015) notes that 2/3 of the world’s cities with a population of over 1.5 million people (e.g. Buenos Aires, Mumbai, Istanbul, Shanghai, and others) are located in the coastal zone. The entire coastal regions have formed, the largest of which are the Gulf region, Californian, Atlantic and Tokaido (Druzhinin and Lachininskii 2015). Up to 40% of the EU territory can be classified as coastal that is home to 50% of the population (Collet and Engelbert 2013, Makhnovsky 2014). Similarly, the coastal zone in some regions of Russia accounts for over 60% of employment, 70% of enterprises, 60% of investment and 66% of industrial production (Druzhinin et al. 2015). The significance of coastal regions is often caused not only by the presence of enterprises of a maritime complex, but also by the border position, the localization of the largest cities – metropolitan centers. The generation of economic activity in such areas is also determined by the multiplier effect, e.g. Ivchenko (2008) found that one job in the maritime sector and ports creates up to 10 jobs in coastal infrastructure.

Being outlined by a coastline, coastal area as a spatial object has movable boundaries from the side of land, which varies depending on the research approach and objectives (Bezrukov 2008, Dergachev 1980, Druzhinin 2004, Gogoberidze 2008, Pokhishevsky 1979, Salnikov 1984, Slevich 1988). In Europe the width of the coastal zone often takes the value of 50 km (Valev 2009). Vallega (1998) outlines the distance of 60 km, and Salnikov (1984) considers the width of a coastal zone to be 80 km. Other versions propose the consideration of coastal regions within 100 km (Makhnovskiy 2014), 200 km (Pak and Majd 2011) and even 500 km (Arakelov 2011). Bezrukov (2008) suggests that the regions considered to be directly located within 50 km from the sea are the coastal areas, while those separated from the coast by 50-200 km are to be considered as indirectly related to the sea. Thus, the heterogeneity of coastal zones, their typological differences that emerge under the influence of natural and socio-economic factors, often remains out of the analysis. The purpose of this article is to provide the typology of coastal zones (CZ) in the European part of Russia based on the analysis of potential for cross-border clustering.
Conclusion

Coastalization effect is said to affect the regional development across the globe, with the coastal regions and coastal zones in particular, resembling the status of growth poles at national level. Natural-geographical, infrastructural, institutional, geo-economic, geopolitical and a range of other factors influence this development, causing differences in-between the coastal areas. An influential factor to the welfare of the coastal frontier areas is the sustainability of its economic systems, interlinked internationally via interstate trade and production, cross-border clusters in particular. The research conducted covered the entire European part of Russia placing emphasis on the analysis and typologization of coastal zones with respect to cross-border clustering. All of the coastal zones were differentiated by scale – macro- and meso-level, and by sector types and subtypes. Research results display the prevalence of the St. Petersburg coastal agglomeration over the rest of territories under study. Coastal zones of Kaliningrad and Rostov regions are the territories that resemble high potential of cross-border clustering, while the northern territories of the European part of Russia are highly vulnerable to natural inhibitors – harsh climate, rough terrain, etc.

Acknowledgment

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Catching-Up Process and Gross Domestic Product Synchronisation in the European Union: Bayesian Shrinkage Estimation and Distance-Based Approach

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Suggested Citation:

Abstract:
The convergence and the business cycle synchronisation in the European Union (EU-28) remains a topical issue as recent economic crisis has affected GDP growth of each member country. The aim of the paper is to test a real convergence between the European countries and to analyse the synchronisation of their GDP per capita. Firstly, the speed of β-convergence is tested using Bayesian Shrinkage Estimators allowing for heterogeneity in panel data model. Secondly, we estimate the cluster dendrogram, which offers the categorisation of countries into clusters according to the similarities of their GDP growth rates. Thirdly, a distance-based method is applied in order to analyse a temporal dynamics of GDP per capita synchronisation in the whole EU-28. Bayesian Shrinkage Estimators reveal rather the heterogeneity of the speed of convergence. The distance-based approach concludes that the overall convergence in the EU-28 prevailed up to 2007, but the crisis caused a divergence of their GDP per capita. Despite a recent temporal convergence, average distances between GDP per capita of all EU-28 countries remain important and are still higher compared to the pre-crisis period.

Keywords: speed of convergence; dynamic panel model; bayesian shrinkage estimator; distance-based method.

JEL Classification: O52; O40; N14; C23; C52; C11

Introduction

Despite the general idea of business cycle synchronisation in Europe, we can still observe certain differences in the evolution of GDP per capita in the EU-28 countries. Moreover, these differences seem to be increased during the economic and debt crisis in Europe. Therefore, the ambition of the paper is to answer tree main questions.

Firstly, we aim to calculate the speed of real convergence of each EU-28 member and to compare the speed of convergence of Central and Eastern European (CEE) countries with core EU countries.

Secondly, we aim to look at the GDP synchronisation and the categorisation of countries according to the similarities in the evolution of their GDP per capita growth rates.

Thirdly, we aim to answer whether we can conclude to overall convergence or divergence of GDP per capita of the whole EU-28 and also whether the economic crisis affected the overall similarities in GDP evolution. Our paper is organised as follows: Section 1 presents an overview of the empirical studies on real convergence and GDP synchronisation; Section 2 describes data and methods. Bayesian dynamic panel estimation is used to test a speed of real convergence in the EU-28 and allows taking into account individual heterogeneity between countries. Cluster analysis is used to categorise the EU-28 members according to the similarities in their GDP growth rates. The distance-based method allows for temporal dynamics and permits to see the overall convergence tendencies in the whole EU-28 in several sub-periods.

Our empirical results are given in Section 3.
Conclusion

The objective of the paper was to estimate the speed of real convergence among EU-28 by Bayesian Shrinkage Estimators, to reveal similarities, i.e. synchronisation in evolution of GDP per capita by cluster analysis and to research the overall convergence or divergence tendencies by application of the so-called distance-based approach.

Nowadays, when countries are marked by economic and debt crisis, we cannot conclude the acceleration of convergence of the CEE countries towards core EU countries. According to our results, the evolution of GDP per capita growth divides EU-28 countries in several clusters and the overall average distance in GDP per capita evolution is increasing. Even Greece is still characterised by imbalances, having relatively high distance of its GDP per capita compared to the core EU countries. This fact is confirmed by our cluster analysis of GDP per capita growth, where Greece does not belong to main cluster consisting of the core EU countries and seems to be rather independent.

To estimate the catching-up process within the EU-28 and to take into account countries heterogeneity, we used Iterative Bayesian procedure. Bayesian Shrinkage estimation of dynamic panel data model of convergence calculated the rates of $\beta$-convergence for each individual EU-28 member. Our results support the idea that the countries converge at different $\beta$-convergence rates. Moreover, the results support the theory of convergence as the estimation shows that $\beta$-convergence rates of new EU members (CEE countries) are systematically higher than convergence rates of core EU countries.

The estimation of the rates of convergence was complemented by cluster analysis. Cluster dendrogram offers the categorization of 28 EU countries into several clusters and revealed (i) similarity of the GDP per capita growth in core EU countries (such as Germany, Netherlands, Belgium, France, Denmark, Italy); (ii) positioning of Latvia, Lithuania and Estonia in one separated cluster; (iii) similarity of GDP per capita of Bulgaria and Romania; and Slovakia and Poland (iv) GDP per capita growth rate similarity in the Czech Republic, Hungary, Slovenia and Croatia. In general, our results concluded that countries situated in the same cluster have very similar rate of convergence according to the Bayesian shrinkage estimators.

As Bayesian panel data estimation reveals individual heterogeneity between countries for the whole analysed time period and does not allow to research temporal changes, this restriction has been overcoming by application of the distance-based approach, which allows for temporal dynamics and decomposes the evolution in several sub-periods. The evolution of calculated mean distance of GDP per capita between all EU-28 countries permitted to conclude that convergence tendencies prevailed up to 2007, while the strongest convergence was observed over the time period 2004 - 2006. However, recent crisis in Europe caused a divergence of GDP per capita and an increase of mean distance of GDP per capita prevailed up to 2011. Although we observe convergence tendencies over the time periods 2010 - 2012 and 2012 - 2014, an increased distance of GDP per capita remains important. Moreover, it should be pointed out that a mean distance between GDP per capita of all EU-28 countries is importantly higher compared to the pre-crisis period.

Acknowledgement

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References


Transfer of Technology in Asian-Pacific Economic Cooperation States. Regional Development Models

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Suggested citation:

Abstract:
The article deals with regional features of technology transfer within APEC (Asian-Pacific Economic Cooperation) member economies taking into consideration different institutional structures (government, regional authorities, scientific, educational, and industrial institutions.) The authors have performed analysis of opportunities for significant economic and technological development based on implementation of regional programs of technical and technological integration of Asian and Pacific region countries, showing quick economic growth due to increase of productive capacity, qualification level of personnel, accompanied with substantial amounts of investments into real sectors of economy, and large-scale implementation of state-of-the-art technologies. Details of forming of different integration models within the region under question: Japan, China, South Korea, Singapore, Taiwan, are studied. Key elements of creation and development of the technology transfer systems from Asian and Pacific leaders in field of technology are provided. The authors use system approach, comparative and statistical analysis in their work. The study describes opportunities for significant economic and technological development based on implementation of regional programs of technical and technological integration of Asian and Pacific region countries. The article contains also a conclusion concerning perspectives of development of global economy on the basis of efficient unlocking of the potential of major regional economic zones, including the ones of the Asian and Pacific region.

Keywords: technology transfer; Asian-Pacific Economic Cooperation; innovations; technologies; development.

JEL Classification: O30; O31; O32; O33

Introduction

Development and economic growth of almost any country depends on a number of factors, ensuring both increase of real production volumes, and improvement of growth quality, as well as effectiveness level. In course of development of economies this range of factors and estimated cost of the factors value change. But development of innovative industry, high-tech, and knowledge economy shift to the first place for most of leading countries of the world.

The USA and Japan are the globally recognized technology field leaders in the world and, particularly, in Asian and Pacific region. However, a number of countries, which mostly imported technologies before, have recently entered the global high technology market. Among the first of these were newly industrialized countries.
(NIC) of the “first wave” (Republic of Korea, Singapore, Taiwan, Hong Kong) - they have increased investments and governmental expenses for research and development (R&D) works (Table 1).

Table 1. Gross domestic expenditure on R&D (GERD) at current prices and PPPs, Million USD

<table>
<thead>
<tr>
<th>Country</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
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<tr>
<td>Australia</td>
<td>20,572.2</td>
<td>20,955.6</td>
<td>...</td>
<td>23,084.0</td>
<td>...</td>
</tr>
<tr>
<td>Canada</td>
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<td>25,674.6</td>
<td>26,279.0</td>
<td>26,303.8</td>
<td>25,813.6</td>
</tr>
<tr>
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<td>1,766.6</td>
<td>...</td>
<td>1,902.8</td>
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<tr>
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<td>368,731.6</td>
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<td>...</td>
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<td>...</td>
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</tbody>
</table>

Source: Compiled by the authors based on data provided by OECD, Main Science and Technology Indicators Database, January 2016.
Conclusion

In spite of sufficient progress in theoretical base of innovative process study, there remains a lot of poorly studied and controversial matters. For example, dynamics of innovative and technological development of countries and regions, application of efficient tools and practices of knowledge and technology transfer, management of innovative processes using different institutional structures etc.

Establishment of required organizational structure, aimed at supporting of the process of acquisition, implementation, and distribution of research and development results involving all participants of the innovative process, i.e. government, science, educational institutions, and business leads to improvement of transfer of technology efficiency. Creation of a system based on integration between scientific, educational and production fields of economy will help forming of competitive high-technology production facilities, improvement of structure of exports due to increase of high-technology share in it, and decrease of raw materials sector, improvement of the state stand on the global technology market.

It’s worth notice that economies of the member countries of Asian and Pacific Economic Cooperation are the most dynamically developing countries in the world with a large internal market of commodities and services, having capacity for a significant economic and technology development based on implementation of regional programs of technological integration.

Quick rate of economic growth due to expansion of productive capacities, improving of personnel qualification along with substantial investments into real sector of economy, large-scale implementation of state-of-the-art technologies are observed in the region (Asia-Pacific Economic Cooperation 2016). It allows using production facilities and natural resources more efficiently. As a summary to this study we believe, perspectives of development of global economy in the upcoming period will depend on development of major regional economic zones, including the ones of the Asian and Pacific region.

References


*** Asia-Pacific Economic Cooperation. 2016. Available at: http://publications.apec.org/


Why We Cannot Fully Understand the Variability of the Insurance Portfolio

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Suggested Citation:

Abstract:
Proper risk assessment, its modeling, classification of risk intensity using appropriately selected variables is generally important information for any firm regarding its further economic strategy, but especially for insurance companies. Objective of this paper is to present the issue of variability of risks that have not measurable moments and show that in these types of risks we have limited ability to understand the variability of such risks throughout the portfolio of certain types of risks, as well as in tariff groups.

Keywords: risk factors; rating variables; tariff variables; pooling of the risks; unobservable moments; variability of portfolio

JEL Classification: C02; G17

Introduction

Intensity of the risk depends in general on a number of risk factors, some of which may not be measurable, or in some cases even not identifiable or even may change in time. For these reasons as a substitutes for risk factors in insurance are used so-called rating factors, also known as rating variables, tariff variables, factors determining premium rates. Rating factors (variables) may in some cases be consistent with risk factors.

The rating variable may have the character of quantitative or qualitative variable and must acquire at least two, but a finite number of values. Similarly, the number of rating variables has to be finite. Rating variables should be independent and statistically significant and the values that take these variables should be easily and reliably identifiable. Rating variables are therefore risk characteristics that can be used for the distribution of risks (insurance portfolio) into classes with different anticipated claims ratio. Each class includes risks that are similar to each other (at best identical), and distinct from the risk of another class. These classes of risk are called tariff groups. If we divide portfolio of risk into tariff groups with k rating variables Rp1, Rp2,…..Rpk, where i-th rating variable (i = 1, 2, 3,…, k) shall take ni values, we will get n1 * n2 * * nk tariff groups. Tariff group includes pooled homogeneous insurance policies. In this paper we will show that our ability to understand the variability of a total portfolio is limited.

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Conclusion
In this paper we have shown that the total variance within a pool of risks can be estimated.
On the other hand it is not possible to determine the contribution to this variance from the variance between risks and the variance within risks. This is the case either individually or on average. Our ability to understand the variability of a total portfolio is because of this limited.

Acknowledgements
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References
The Effect of the European Central Bank’s Unconventional Monetary Policies to the Financial Stability of the Eurozone

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Suggested Citation:  

Abstract:  
Monetary policy plays a major role in an economic development of a country. Financial system is stable when it is able to allocate economic resources efficiently in order to manage financial risk through proper measurements and self-correction, when he was under the influence of external shocks. That is why we take into account that the financial system, regardless of its size or complexity, is stable when it is able to contribute to the economy of speech and correct imbalances arising from significant shocks. The European Central Bank (ECB) adopted non-standard measures of monetary policy to respond to external shocks during the global financial crisis and in order to improve the financial stability of the Eurozone and its support for the economic recovery. The main purpose of research is to analyse the impact of non-standard monetary policy measures for the financial stability of the Eurozone. Statistical data have been collected from a variety of resources and the econometric model was created in the course of the study. The proposed econometric model was analysed and tested for all diagnostic tests using the software package GRETL. As a result of the scientific study the conclusion is that the ECB’s non-standard monetary policy measures have a positive impact on the financial stability of the euro area.

Keywords: monetary policy; financial stability; European Central Bank; econometric model; econometric diagnostic tests.

JEL Classification: E43, E44, E50, E52, E58.

Introduction  
The recent global financial crisis triggered many central banks to design and implement new directions of the monetary policy. The European Central Bank (ECB) adopted so called ‘unconventional’ monetary policy measures which would react to changes in inflation and output by altering interest rate. One of the latest non-standard
measures is quantitative easing, which focused on domestic effects analysing several channels of domestic transmission (Hassan and Brown 2012).

The non-standard measures taken by the Euro system have been targeted mainly at the banking sector, owing to its important role in the transmission of monetary policy and the financing of the economy in the euro. Many of the non-standard measures have exploited the flexibility of the existing operational framework of the ECB (Fratzscher, Lo Duca and Straub 2014). The non-standard measures taken as the financial turmoil turned into a crisis comprise the Enhanced Credit Support and the Securities Markets Programme (Falagiarda, Mc Quade and Tirpak 2015).
Conclusion
To conclude, the Euro area’s economic recovery and financial stability are supported by non-standard monetary policy measures of the ECB. As we displayed in charts macroeconomic, political uncertainties have declined and financial risk aversion has dropped by 2015. Moreover, value added and employment have increased particularly strongly in the Eurozone. In addition to this, income and earning risks have diminished significantly. Favourable financing conditions in euro area, which were positively affected by the ECB’s non-standard monetary policy measures, contributed to a recovery in banking sector.

The hypothesis of the research states a positive effect of the ECB’s unconventional monetary policy measures to the Euro area and financial condition improvement, ongoing economic recovery as well. We accept hypothesis and finalize that non-standard monetary policy measures had a favorable effect for financial stability and economic condition of the Euro area countries. As we saw before, the empirical results confirmed financial and economic improvements by 2015 in the Eurozone.

References

*** Eurostat Database 2016. Available at: http://ec.europa.eu/eurostat
APPENDICES

APPENDIX 1
Model 1: OLS, using observations 1-19
Dependent variable: log_Actives/GDP
Heteroskedasticity-robust standard errors, variant HC1

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const</td>
<td>5.05619</td>
<td>1.22992000</td>
<td>4.1110</td>
</tr>
<tr>
<td>RealGDP</td>
<td>0.00419765</td>
<td>0.00706693</td>
<td>0.5940</td>
</tr>
<tr>
<td>IR</td>
<td>0.01290520</td>
<td>0.03458300</td>
<td>0.3732</td>
</tr>
<tr>
<td>ER</td>
<td>-0.01361030</td>
<td>0.00732610</td>
<td>-1.8578</td>
</tr>
<tr>
<td>PPP</td>
<td>1.77881000</td>
<td>0.62737300</td>
<td>2.8353</td>
</tr>
<tr>
<td>HICP</td>
<td>0.09592870</td>
<td>0.14195700</td>
<td>0.6758</td>
</tr>
</tbody>
</table>

Mean dependent var: 5.384245 S.D. dependent var: 0.531913
Mean squared resid: 2.258200 S.E. of regression: 0.416783
R-squared: 0.556586 Adjusted R-squared: 0.386043
F(5, 13): 40.39851 P-value(F): 1.80e-07
Log-likelihood: -6.726056 Akaike criterion: 25.45211
Schwarz criterion: 31.11875 Hannan-Quinn: 26.41113

Log_Actives/GDP = c + 0.0042Real GDP + 0.012 IR – 0.0136 ER +1.77 PPP + 0.095 HIPC + u

APPENDIX 2

Restriction set
1: b[RealGDP] = 0
2: b[IR] = 0
3: b[ER] = 0
4: b[PPP] = 0
5: b[HICP] = 0

Test statistic: F(5, 13) = 3.2636, with p-value = 0.0397375

Restricted estimates:

<table>
<thead>
<tr>
<th>coefficient</th>
<th>std. error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>const</td>
<td>5.38424</td>
<td>0.122029</td>
<td>44.12</td>
</tr>
<tr>
<td>RealGDP</td>
<td>0.000000</td>
<td>0.000000</td>
<td>NA</td>
</tr>
<tr>
<td>IR</td>
<td>0.000000</td>
<td>0.000000</td>
<td>NA</td>
</tr>
<tr>
<td>ER</td>
<td>0.000000</td>
<td>0.000000</td>
<td>NA</td>
</tr>
<tr>
<td>PPP</td>
<td>0.000000</td>
<td>0.000000</td>
<td>NA</td>
</tr>
<tr>
<td>HICP</td>
<td>0.000000</td>
<td>0.000000</td>
<td>NA</td>
</tr>
</tbody>
</table>

Standard error of the regression = 0.531913

APPENDIX 3

Auxiliary regression for RESET specification test
OLS, using observations 1-19
Dependent variable: log_ActivesGDP

<table>
<thead>
<tr>
<th>coefficient</th>
<th>std. error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>const</td>
<td>23.7190</td>
<td>854.967</td>
<td>0.02774</td>
</tr>
</tbody>
</table>

1585
RealGDP  0.0698577  1.10216  0.06338  0.9506
IR     0.155192   3.38816  0.04580  0.9643
ER    -0.153574   3.51880 -0.04364  0.9660
PPP    27.3612    467.783  0.05849  0.9544
HICP   1.47258    25.2445  0.05833  0.9545
   yhat*2 -0.285465  49.0717  -0.005817 0.9955
   yhat*3 -0.130276  3.04650 -0.04276  0.9667

Test statistic: $F = 2.665387$, with $p$-value $= P(F(2,11) > 2.66539) = 0.114$

APPENDIX 4

White's test for heteroskedasticity
OLS, using observations 1-19
Dependent variable: yhat^2

<table>
<thead>
<tr>
<th>coefficient</th>
<th>std. error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>const</td>
<td>-27.9026</td>
<td>32.7454</td>
<td>-0.8521</td>
</tr>
<tr>
<td>RealGDP</td>
<td>0.0240518</td>
<td>0.0267548</td>
<td>0.8990</td>
</tr>
<tr>
<td>IR</td>
<td>0.276037</td>
<td>0.0671553</td>
<td>4.110</td>
</tr>
<tr>
<td>ER</td>
<td>0.522315</td>
<td>0.585720</td>
<td>0.8917</td>
</tr>
<tr>
<td>PPP</td>
<td>-0.153574</td>
<td>0.04580</td>
<td>-2.112</td>
</tr>
<tr>
<td>HICP</td>
<td>0.168625</td>
<td>0.0973055</td>
<td>1.733</td>
</tr>
<tr>
<td>sq_RealGDP</td>
<td>-0.00125409</td>
<td>0.000992945</td>
<td>-1.263</td>
</tr>
<tr>
<td>sq_IR</td>
<td>-0.0256614</td>
<td>0.00637200</td>
<td>-4.027</td>
</tr>
<tr>
<td>sq_ER</td>
<td>-0.002287977</td>
<td>0.00257065</td>
<td>-0.8907</td>
</tr>
<tr>
<td>sq_PPP</td>
<td>2.49137</td>
<td>1.08261</td>
<td>2.301</td>
</tr>
<tr>
<td>sq_HICP</td>
<td>-0.184214</td>
<td>0.0794099</td>
<td>-2.320</td>
</tr>
</tbody>
</table>

Unadjusted R-squared = 0.768202

Test statistic: TR^2 = 14.595836, with $p$-value $= P(Chi-square(10) > 14.595836) = 0.147506$

APPENDIX 5

Frequency distribution for yhat^4, obs 1-19
number of bins = 7, mean = -9.34925e-016, sd = 0.416783

<table>
<thead>
<tr>
<th>interval</th>
<th>midpt</th>
<th>frequency</th>
<th>rel. cum</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; -0.56114</td>
<td>-0.67281</td>
<td>1</td>
<td>5.26%</td>
</tr>
<tr>
<td>-0.56114 - -0.337780</td>
<td>-0.44947</td>
<td>3</td>
<td>15.79%</td>
</tr>
<tr>
<td>-0.33780 - -0.11447</td>
<td>-0.22613</td>
<td>1</td>
<td>5.26%</td>
</tr>
<tr>
<td>-0.11447 - 0.10887</td>
<td>0.0027969</td>
<td>7</td>
<td>36.84%</td>
</tr>
<tr>
<td>0.10887 - 0.33221</td>
<td>0.22054</td>
<td>4</td>
<td>21.05%</td>
</tr>
<tr>
<td>0.33221 - 0.55555</td>
<td>0.44388</td>
<td>2</td>
<td>10.53%</td>
</tr>
<tr>
<td>&gt;= 0.55555</td>
<td>0.66721</td>
<td>1</td>
<td>5.26%</td>
</tr>
</tbody>
</table>

Test for null hypothesis of normal distribution:
Chi-square(2) = 0.254 with p-value 0.88064

APPENDIX 6

Test for normality of yhat^1:
Doomnik-Hansen test = 0.254217, with p-value 0.880638
Shapiro-Wilk W = 0.971343, with p-value 0.802968
Lilliefors test = 0.138997, with p-value ~ = 0.42
**APPENDIX 7**

Variance Inflation Factors
Minimum possible value = 1.0
Values > 10.0 may indicate a collinearity problem

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RealGDP</td>
<td>1.056</td>
</tr>
<tr>
<td>IR</td>
<td>1.131</td>
</tr>
<tr>
<td>ER</td>
<td>1.263</td>
</tr>
<tr>
<td>PPP</td>
<td>1.320</td>
</tr>
<tr>
<td>HICP</td>
<td>1.182</td>
</tr>
</tbody>
</table>

VIF(j) = 1/(1 - R(j)^2), where R(j) is the multiple correlation coefficient between variable j and the other independent variables

Belsley-Kuh-Welsch collinearity diagnostics:

<table>
<thead>
<tr>
<th>lambda</th>
<th>cond</th>
<th>const</th>
<th>RealGDP</th>
<th>IR</th>
<th>ER</th>
<th>PPP</th>
<th>HICP</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.286</td>
<td>1.000</td>
<td>0.000</td>
<td>0.004</td>
<td>0.013</td>
<td>0.000</td>
<td>0.000</td>
<td>0.005</td>
</tr>
<tr>
<td>0.873</td>
<td>2.216</td>
<td>0.000</td>
<td>0.030</td>
<td>0.010</td>
<td>0.000</td>
<td>0.000</td>
<td>0.277</td>
</tr>
<tr>
<td>0.584</td>
<td>2.709</td>
<td>0.000</td>
<td>0.172</td>
<td>0.043</td>
<td>0.000</td>
<td>0.000</td>
<td>0.091</td>
</tr>
<tr>
<td>0.248</td>
<td>4.161</td>
<td>0.000</td>
<td>0.021</td>
<td>0.899</td>
<td>0.001</td>
<td>0.001</td>
<td>0.030</td>
</tr>
<tr>
<td>0.009</td>
<td>21.641</td>
<td>0.002</td>
<td>0.771</td>
<td>0.000</td>
<td>0.060</td>
<td>0.377</td>
<td>0.561</td>
</tr>
<tr>
<td>0.001</td>
<td>86.530</td>
<td>0.998</td>
<td>0.001</td>
<td>0.036</td>
<td>0.939</td>
<td>0.622</td>
<td>0.036</td>
</tr>
</tbody>
</table>

lambda = eigenvalues of X'X, largest to smallest
cond = condition index
note: variance proportions columns sum to 1.0
Status of Financial Literacy Among Small Scale Entrepreneurs: A Case Study

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Suggested Citation:

Abstract:
The purpose of this paper is to study the status of financial literacy among small scale entrepreneurs (SSEs) in a small district of Tamil Nadu state in India. The study is based on factors influencing small scale entrepreneurs to know about financial services; the problems faced by SSE while availing financial services; their satisfaction towards banking services; and appropriate measures to be taken for improving financial literacy among SSEs.
The study implemented a mixed methodology research design using both qualitative and quantitative methods. A survey was conducted among 150 selected small scale entrepreneurs using convenient sampling technique. The results of Garrett Ranking Technique showed that majority of respondents are influenced by knowledge about financial products, followed by knowledge of financial numeracy, money management, budgeting, timely payment of bills, intensity to save, propensity to consume, risk aversion and trusted financial advice. Results of Chi-Square test revealed that the demographic profiles are not significantly related to the problems of the SSEs.

Keywords: financial literacy; small scale entrepreneurs; financial services; banking services; financial knowledge; money management

JEL Classification: Z23; M13

Introduction

Financial literacy is necessary for the small scale entrepreneurs who have low level of awareness and lack of knowledge about financial products leading to major cause of failure in businesses. Campbell (2006) discussed that many investors failed to refinance their mortgages during a period of falling interest rates due to lack of financial literacy. Those investors also seem less likely to know the terms of their mortgages, including the interest rates they pay (Bucks and Pence 2006). Moore (2003) discussed about financially illiterate borrowers landing up with debts and high-cost mortgages.

The present study explores factors influencing small scale entrepreneurs to know about financial services, problems faced by small scale entrepreneurs while availing financial services, the small scale entrepreneurs’ satisfaction towards the banking services and kind of assistance expected by small scale entrepreneurs from the bank.
Suggestions and conclusion

The following suggestions were recommended from this study to various beneficiaries like banks, and small scale entrepreneurs. The banks should be more flexible in their attitude to enable the borrowing units to overcome any temporary difficulties; should provide adequate and timely credit at reasonable rate of interest, without collaterals; should conduct awareness programmes in various industrial areas to increase the utilization of financial services; should establish separate counters in the bank for offering financial services; banking facilities should be made available to the remotest and backward areas where bank branches do not exist. The small scale entrepreneurs should come forward to know about the various financial products and services offered by banks; should utilize the loan for their business purpose rather than domestic consumption; should repay the loan regularly which will enhance the credit worthiness of the entrepreneurs.

Financial literacy is a very useful tool for financial growth of small scale entrepreneurs. The small scale entrepreneurs face various problems while availing financial services such as lack of technical knowledge, inadequate knowledge about financial products, complex procedural formalities, inadequate credit etc. Hence, the banks should take necessary steps to enhance the financial literacy among small scale entrepreneurs by providing adequate and timely credit at reasonable rate of interest and conducting awareness programmes.

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1590
The Dynamic Model of Elements’ Interaction Within System of Science-Intensive Production Under Unstable Macroeconomic Conditions

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Suggested Citation:

Abstract:
The proposed article is devoted to the important issue of monetary regulation of high-tech industry system under the effect of unstable macroeconomic situation. The proposed methods and models are an effective method of resolving problems of monetary policy. The emphasis is on the qualitative analysis of the impact of monetary policy and external shocks on economic dynamics in the country. In this work, we produced an interpretation of the types of monetary policy shocks. The factors of exogenous shocks are matched with manifestation of the shocks of preferences, expectations and technological aspects. For the strategic risks-analysis of total flow of risks a mathematical model is made. The model takes into into account the economic, technological shocks and financial instability factors. As the result a mathematical description of the status of economic actors and conditions competitive equilibrium in the economy is generated.

Keywords: risk-management; risk flow; model of an economic shock; monetary policy; the model of the economic entity.

JEL Classification: C6; E5

Introduction

One of the most underlying causes of inflation in developing market economies is its low level of development (underdevelopment) and an inefficient structure of economy. These factors are manifested by high production costs, noncompetitiveness of national producers as well as inability to manufacture high-tech products.

An analysis of scientific materials has been conducted, which revealed that the scholars concentrate on the existing methods of monetary and fiscal means to exert influence on the economy in order to reduce prices: R. Kollmann (2008) applies the method of mathematical modeling to various means of state policy (interest rate, tax rate) and its impact on inflation and the population's welfare; Caporale, T. and Caporale, B. (2008) analyze the influence of political regimes (liberal and left-leaning) on inflation and the negative profit received by society from it; in his article Hofstetter (2008) analyzes the influence of different factors (oil price shocks; the growth of food prices; the economy’s transparency; currency rates; political regime (and its stability) etc.) on the retention of anti-inflation policy results over time; Cevik, Dibooglu, Kutan (2016) state that the financial liberalization is a necessary
condition of curbing inflation as exemplified by Spain, Greece and Portugal; Cobham’s (2008, 2010) article contains analysis on the degree of freedom in central banks’ actions and the inflation rate; an unusual approach to price reduction is worthy of note, i.e. the recession created by the Federal Reserve to curb inflation. Among the advantages of this approach is that in case of success the post-recession economic recovery will be achieved without implementing additional monetary policies as it was described by Carrillo (2007), Masseron (2010) and others.

There’s a need to point out that the issue of monetary policies, economic shocks and their influence on the economy of developed countries (mostly the US and the EU) is thoroughly studied. The issue is less thoroughly studied for developing economies. The review of the research results is included in the treatises by Christiano, Eichenbaum and Evans (2005).

There are several approaches to informative interpretation of monetary policy shocks (Christiano et al. 1999, Altig et al. 2011). Firstly, a monetary policy shock can be considered an exogenous shock of central bank preferences happened as a result of a casual change of relative importance attributed to inflation and unemployment rate by a central bank and economic agents, for instance, by the transformation of the management’s attitude.

Secondly, monetary policy shocks can emerge as a result of a strategic interaction between a central bank and economic agents as described in the following scientific works (Chari et al. 1998). A central bank can be trying to escape incurring social costs determined by a divergence from the private sector expectancies (Narin 1997). In particular, the model demonstrates that a realization of a temporary shock of real variables can lead to a rise of the expected inflation rate. The economic agents’ expectations may be self-fulfilling and cause exogenous changes in monetary policy.

The third source of exogenous changes in monetary policy is the technical characteristics of central banks’ carrying out operations of management of the bank sector liquidity (Bernanke and Mihov 1998). Thus, an interest rate on currency market serving as an operational benchmark of monetary policy can diverge from the target level as a result of central banks’ erroneous forecast of liquidity demand from lending institutions (Anzuini et al. 2012, Galí 2015). One more technical factor to cause exogenous shocks of monetary policy is in the fact that while making decisions the central banks’ board of directors takes into account the preliminary economic data with possible inaccuracies (Bekaert et al. 2013, Bruno and Shin 2015, Calza et al. 2013).

In the context of economic slowdown, low oil prices and lesser accessibility of international capital markets an efficient monetary policy can absorb the external shocks and protect real and financial sector of the economy from the impact of negative factors (Davig and Doh 2014). At the same time, the price of error increases repeatedly as an inefficient policy may deteriorate the negative effects (Castelnuovo 2013).

The methods proposed in the article can serve an effective instrument of handling monetary policy issues. In the view of this, the emphasis lays on qualitative analysis of monetary policies’ impact and external shocks on economic dynamics in a country. Analysis and assessment of strategic risks of the general risk flow is the essential element of activity and a requirement of maintaining companies’ competitiveness in science-intensive industries (Chursin and Danyluk 2014).

The issue of uncertainty impact phenomenon is that during the transitional period the mechanisms of monetary control works worse lagging behind instantaneous distortions on the market or mismanaging (Vlasov and Chursin 2015). In the context of unstable crisis situation the national monetary policy undergoes considerable external influence of macroeconomic fluctuations. An additional negative effect creates uncertainty on the international fuel and energy market as well as general changes production process structure (Sadovskaya et al. 2012). Therefore, the creation of strict and practical economic-mathematical models with a design to study the availability and efficiency of monetary policy instruments is of utmost importance (Kulikov 2011).

Let us create an economic-mathematical model adjusted for economic and technological shocks and other factors of financial instability in order to analyse the strategic risks of the general risk flow. While designing the model, the complex of all four types of shocks is to be taken into consideration, i.e. the shock of demand on science-intensive products, the shock of margins expected by producers, the technological shocks and the monetary policy shocks with a consideration of private banks performance (Chursin and Makarov 2015).
The proposed model is designed to describe the performance of all parties on the market: households, enterprises and the bank sector adjusted for the respective three types of shocks: the shock of individual preferences, the shock of product margin and the monetary policy shock. Alongside with technological shocks, these economic shocks bring about fluctuations of production volume, inflation rate and the interest rate value (Borio and Zhu 2012).
Discussion of practical value and conclusions

The model of macroeconomic relations and economic subject actions allows predicting various scenarios of negative economic situations development under pressure. Such approach allows considering such significant aspects as external impact from the global market in terms of level, intensity and duration of exogenous effects. The knowledge about the pessimistic trajectory of development process allows intentionally regulate the condition of economic system and sustain the stable state development (Yusufov 2011).

The difficulty of the precise evaluation of the stress, shock circumstances is that such type of situation is more complicated in the precise interpretation, in the adequate identification of the direct shock factor, its features and characteristics as well as the significance of the impact and the following post-shock development of events. Formulated mathematical models are only the basis for the analysis of the processes of economic subjects’ interaction, however, they properly describe connections’ mechanisms and the influence of the factors against each other.

In the current work we created the model that allows evaluating the strategic risks of the general risk flow on the basis of the economic, technological shocks and financial instability. We took into consideration four types of shocks: shocks of household preferences, shocks of margins expected by producers, shocks of the central bank’s monetary policy and technological shocks. In order to evaluate the model characteristics, we used the method of maximum credibility, then we performed the analysis of the degree to which different shocks influence the volume of production, inflation rate and interest rate.

The full-rate understanding of the mechanisms of the actual impact of the monetary policy on the specific economic subjects provides the possibility to make productive strategic decisions that increase self-sufficiency and independence of national economy.

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Analytical Review of the Contemporary State of the Russian Scientific Organizations from the Development Management Positions

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Abstract:
The paper substantiates the need to improve the management tools of scientific organizations on the basis of the methodology of change and development management. The authors showed that the existing methodological framework for assessing the effectiveness of scientific organizations do not fully provide an information base for further organizational development. On the basis of concept’s analysis, the definition of the term “development management of scientific organizations” was proposed. It includes the criteria that determine its existence in the investigated structures. Based on the developed methodology an assessment of the current state of scientific organizations in the Russian Federation from the perspective of development management was made. The obtained results and the conclusions drawn on their basis are a significant source for the creation of a general methodological basis for the development management of scientific organizations and its practical implementation.

Keywords: scientific organization; model and type of development; development management; organizational development

JEL Classification: I23

Introduction
In the message of the Russian Federation’s President to the Federal Assembly for 2017 a great attention is paid to the development of the country’s scientific and technological complex. As indicated in the document it will provide a new level of development of the economy and social sectors. Those countries that can generate a flow-through technologies will have a long-term advantage, an opportunity to receive huge technological rent. Those countries which do not that will be in a dependent, vulnerable position.

The President of the Russian Federation notes the need for the development of individual collectives, structures, organizations; “in the scientific sphere as elsewhere we will develop competition, will support the strong ones, that able to give a practical result.”

At the state level a policy to increase the effectiveness of scientific organizations’ activity is actively being developed. Thus in accordance with Governmental Decree No. 312 dated April 8, 2009, an annual monitoring of
the effectiveness of scientific organizations’ activity that performing research, design and experimental and technological work for civil purposes is conducted. The purpose of this monitoring is to evaluate scientific organizations’ the activity by those federal executive bodies under the supervision of in which they are.

In accordance with evaluation results management decisions aimed at reorganizing or liquidating those structures that shows very low values of studied indicators are made.

In accordance with the basic principles of the restructuring of scientific organizations of the Federal Agency of Scientific Organizations of the Russian Federation, first of all, the possibility of joining to leading scientific organizations those organizations which are eventually classified as 3rd category and have lost their scientific activity as the main activity and development prospects is taking into account. Herewith the adjustment of the main profile (fundamental / applied) and the further redistribution of the amount of funding for research based on the types of research that actually performed is substantiated.

Obviously this approach ensures the optimization of scientific organizations’ network and is able to create prerequisites for reducing the negative trends in their activity. At the same time representatives of the scientific community are skeptical about this issue.

Thus Mindeli and Chernykh (2015) pointed out the enlargement of scientific organizations as their main direction of transformations. However, as the scientists write no one has yet proved that the "agglomeration" of research organizations in science in itself automatically improves the effectiveness of scientific researches and eliminates the problems listed above.

Similarly, a high assessment of scientific organization’s activity in a particular period does not always characterize the favorable prospects for its development in the future, nor is it an indication that all directions of its functioning correspond to modern requirements.

As Kulagin (2016) points out in his work the success in general does not mean that the scientific organization is doing well. In the strongest institution there can be unproductive scientific collectives and conversely in the weakest institution there can be some very strong divisions. Integral performance indicators do not provide detailed evaluation. In addition, the low productivity of researches can be explained by temporary random factors, the creation of a scientific reserve on the problem that can later become the basis for outstripping development.

In most cases in the process of assessing the current effectiveness of scientific organizations the issues related to the further rapid development of the structures remain beyond the boundaries of these studies. It is the search for optimal development directions of scientific organizations depending on the achieved results and the available potential that can ensure achievement of high indicators of performance monitoring in the long view and create a basis for creation of scientific reserves and specific scientific and technical products for the real sector of the economy and the social sphere.
Conclusion

Scientific organizations as objects of research are not sufficiently represented in modern publications while the external environment dictates new requirements for their advanced development. Science and technology are becoming the main factors of economic growth and competitiveness of national economies.

Change management and development management of scientific organizations is able to ensure an increase in their current and prospective performance, to create prerequisites for a qualitative positive dynamics of manufactured scientific and technical products.

Analysis of the essential characteristics of the terms "development" and "changes" ensured the identification of key characteristics and the formulation of criteria in relation to the specifics of scientific organizations.

The basic criteria of scientific organizations' development and their corresponding indicators are pointed out in the paper. Criteria consist of: performance including founder' satisfaction, obtaining significant scientific results, satisfaction of the scientific community; activity efficiency characterized by indicators of profitability; resource potential that is consist of scientific organization's personnel and the material and technical base.

The methodology that was created on the basis of indicators characterizing the criteria is based on the analysis of their growth in dynamics. During the processing of empirical data, the methodology was subjected to modification and adjustment of the criteria in order to obtain an adequate result. It is noted however that for the completeness and accuracy of the studies, the analysis of data with a large time horizon is required that are currently not available since the collection and systematization of materials in FSMSO were carried out in full only from 2013.

As a result of the analysis a negative trend in the development of studied scientific organizations was revealed: more than half of the sample were classified as the group with negative development dynamics. At the same time only 11 organizations are belonging to the rapidly developing structures, and 109 organizations are belong to the developing ones.

Such tendency can be explained by the ongoing processes of reforming the system of scientific organizations in the Russian Federation as well as the impact of the financial and economic crisis. In the result of crisis direct and competitive budgetary funding for scientific organizations which is in most cases is the main source of their income was reduced.

In this case, the peculiarities of the functioning of scientific organizations is the need to create a scientific reserve for performing various kinds of work and a short period of influence of the obtained results on the dynamics of indicators in the changing conditions of technology development.

In general, obtained results are the basis for further research of the key growth factors of scientific organizations as well as the development of necessary management decisions aimed at identifying the reserves for their development.

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