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Technique of Design for Integrated Economic and Mathematical Model for Mass Appraisal of Real Estate Property. Study Case of Yekaterinburg Housing Market

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Abstract:

There are a number of economic and mathematical models designed for mass appraisal of residential real estate at the moment, which take into account their construction and performance characteristics but do not take into account the evolving macroeconomic situation in the country and in the world. The drawback of such static models is their rapid obsolescence, the need for constant updating and unsuitability for medium-term forecasting. On the other hand, there are dynamic models that take into account the current macroeconomic situation but are designed for predicting and studying the overall price situation on the market rather than for mass appraisal of real estate with their variety of construction and performance characteristics.

This paper proposes a technique of creating integrated models with properties of such static and dynamic models, i.e. taking into account both construction and performance characteristics of residential facilities and evolving macroeconomic situation in the country and in the world. Development of the technique and creation of models is carried out with the use of neural network technology on the basis of statistical data for the period from 2006 to 2016. In addition to its main purpose – the mass appraisal of urban apartments, the model is suitable for medium-term forecasting and identification of the patterns of the housing market. For example, the model was used to study the effect of the state financial policy on the housing market in Yekaterinburg. Computer experiments have shown that in case of growth in housing lending, the apartment prices will rise, and the rate of growth of luxury apartments with larger area will be about 2.2 times higher than the growth rate of cheaper apartments with smaller area. It was found that an increase in housing construction in Yekaterinburg up to 2,550 thous. sq.m. would lead to a further increase in value of apartments. However, with the increase in new housing above the 2,550 thous. sq.m. mark, the model predicts market saturation, prices growth cessation and their further decline. Similar studies and forecasts can be made for the real estate market in other countries and cities using the proposed technique.

Keywords: regional real estate market, mass appraisal, macroeconomic indicators, appraisal, forecasting, neural network.

JEL Classification: L70, L74, O12.

Introduction

According to the analysis of the literature, there are a lot of papers that note the importance and relevance of designing precise techniques of mass appraisal of real estate. For example, the paper (Hefferan and Boyd, 2010) provides an overview of the international literature, as well as interviews with government officials and appraisers from many countries, from which it follows that the systems of mass appraisal and property taxation are "an important and solid basis for increasing state revenues." The paper (Davis *et al.* 2012) notes that the existing property appraisal systems based on economic and mathematical models are "a useful tool for tax computation in a number of developing and emerging countries. The paper (Manganelli *et al.* 2014) reports that such models are "useful in the field of taxation and in supporting decision making in the planning of territorial transformations."

Reports of successful attempts to create systems of mass appraisal of real estate property on the basis of the new mathematical tool – neural networks – emerge in Western literature in the 1990s. Apparently, one of the first studies in this direction could be the 1991 publication of Tay and Ho (1991), who applied the multilayer perceptron trained by back propagation to determine the market price of real estate property in Taiwan. It was an alternative to the method of multivariate regression.

Evans, James and Collins (1991) used neural networks to appraise the residential property in England and Wales in the same year. As a result, they concluded that "the neural network model is best for appraisal of real estate."

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Do and Grudnitski (1992) published a report in 1992 that they used a perceptron with eight input neurons to input characteristics of the real estate property to appraise the US real estate property: building area, number of floors, area of land, etc. The perceptron had one hidden layer with three sigmoid neurons. It is reported that "the neural network model had twice the accuracy of the predicted values than similar regression model" on the test set of 105 houses. As a result, it was concluded that "the neural network is better suited for appraisal of real estate property than the multivariate regression model."

Further, since the mid-1990s to the present time, there have been a series of publications devoted to the development and application of neural network models for mass appraisal of real estate property, and many studies note the benefits of this advanced technology compared to regression modeling techniques. For example, the paper (Borst 1995) reports that its author has successfully trained a neural network to predict the value of real estate in New York. His neural network included 18 factors, including area of housing, availability of the fireplace, sanitary equipment, air conditioner, months since the last sale, etc. Results of 217 deals over the period from 1988 to 1989 with the price varying in between \$103,000 to \$282,000 were used for training.

McCluskey *et al.* (1997) notes that "the neural network, in contrast to the multivariate regression, ensures excellent predicative ability in predicting the Northern Ireland market." The paper of Curry *et al.* (2002) reviews the possibilities of a neural network approach to building the systems of property appraisal by its characteristics. The mentioned advantages of neural network approach include the neural networks using objective data rather than subjective assessment of the purchase and sale intentions. Guan *et al.* (2008) describe the attempt to implement an adaptive fuzzy neural network to predict the price of residential property. The data set consists of information on past deals in the US market and includes characteristic parameters of real estate properties and the relevant market price. Neural network modeling results are compared with the data obtained using the regression analysis systems. Kontrimas *et al.* (2011) carried out a comparative analysis of the application of techniques of mass appraisal of real estate in Lithuania and showed that "the best results were obtained using a multilayer perceptron." Mao *et al.* (2014) reported that in relation to Hangzhou (China), a predictive model was designed that used data on the housing market during 1999-2012. The model is based on neural networks with genetic optimization. It is noted that the model has high predictive accuracy, which, however, decreased due to the impact of national policy macro-control in the housing market.

Recently, Guan *et al.* (2014) notes the relevance of the creation of property appraisal systems based on the actual results of sales deals. It is noted that the "experience of using the method of regression analysis for the creation of such systems was unsatisfactory." Alternatively, the article proposes a method based on the use of neuro-fuzzy neural networks. It is noted that "this progressive method is undeservedly underused in the creation of systems of mass appraisal of real estate." Also, Zhang *et al.* (2015) reports on the use of neural network models for the study of China's real estate market cycles.

The first neural network system of mass appraisal of real estate in Russia was created in 2008 by L. N. Yasnitsky, and its description is set forth in the collective monograph (2008, 10-15). Multilayer perceptron allowed to create a system that provides an appraisal of apartments in Perm (Russia) with a highest relative error of 16.4%. The following were used as the model input parameters: area of the apartment, its condition, floor, house type, and distance from the city center. The studies of the neural network mathematical model revealed some patterns of practical interest for homeowners, realtors and investors operating on the housing market. For example, it was shown that the price for expensive apartments falls much faster than that of the cheap ones as the distance from the center increases. Examples were given showing that renovation of some luxury apartments leads to a substantial increase in their price, while the same renovation in the house more than 20 years old has almost no impact on its commercial value and therefore is unprofitable.

In the following 2009, Borusyak, Munerman and Chizhov (2009) reported that they have developed and successfully implemented a neural network software system for non-residential property appraisal in the Moscow City Property Department. They explain their success with the use of the set of techniques that allowed to identify and eliminate the outliers at the stage of information pre-processing, as well as the use of unconventional generalized regression neural network that has provided low average relative error of 20.0%, in their view. This technique of mass appraisal of non-residential property has found further development and application in the thesis of Munerman (2011) defended in 2011.

Summing up the review of the economic and mathematical models designed for mass appraisal of real estate, let's pay attention to their common disadvantage. They all quickly become outdated and require constant updating, because they do not take into account the constantly evolving macroeconomic situation in the country and in the world. We will hereinafter call such models *static*. This lack of static models is particularly true for

Russia and a number of countries, the market of which is under development and is therefore dependent on the evolving macroeconomic factors: oil prices, dollar rate, gross domestic product (GDP), stock indices, states policies, etc.

It should nevertheless be noted that there is a series of works devoted to the creation of economic and mathematical models that do take into account these macroeconomic parameters, but are designed only for modeling and studying the dynamics of the real estate market, rather than for the purpose of mass appraisal. We call such models *dynamic*. For example, in their paper Becker *et al.* (1999) have used such macroeconomic factors as inflation, economic growth, GDP, unemployment, etc. in the study of the dynamics of the real estate market. Links between macroeconomic indicators and the behavior of the real estate market were investigated in the paper of Greenwood *et al.* (1991).

Nevertheless, in spite of the fundamental nature of these studies, we must note once again that the *dynamic* models are designed primarily for the study of the dynamics of the market as a whole, rather than for mass appraisal of specific properties. Indices of value of apartments calculated in such models (average unit costs of apartments normalized to a square meter) can of course be translated into the cost of specific apartments based on their construction, operational, environmental and other parameters. However, such conversion can be done only using additional techniques, which are not usually used for the purposes of mass appraisal of real estate because of their inefficiency. The problem is that the unit price of apartments of the same type located in the same area, or even in the same building, may differ from each other. Therefore, it requires the use of a more differentiated approach.

Thus, on the one hand, we have a number of *static* models designed for mass appraisal of real estate property, which take into account their construction, operational, geographical, environmental, climatic, economic characteristics, but do not take into account the evolving macroeconomic situation in the country and the world, and therefore quickly becoming outdated, requiring constant updating and not suitable for medium-term forecasting. On the other hand, there are *dynamic* models that take into account the overall state of the economy but are designed to predict and study the overall price situation in the real estate market, rather than for mass appraisal of individual residential units. In this regard, the aim of this paper is to develop the technique of creating *integrated* neural network economic and mathematical models that have properties of *static* and *dynamic* models described above, *i.e.* taking into account both construction and performance characteristics and evolving macroeconomic situation in the country and in the world. The development of the technique and creation of the model is carried out by the example of the residential real estate market of Yekaterinburg, which refers to the developed cluster of Russian cities with the highest incomes and relatively high prices on the housing market.

Concluding remarks

Thus, an integrated economic and mathematical model of mass appraisal of residential real estate in Yekaterinburg was created, taking into account both construction and performance parameters of apartments and the evolving economic situation in the country and the world. In contrast to the *static* economic and mathematical models that take into account only construction and performance parameters, the developed model does not require frequent updating and is also suitable for medium-term forecasting of the behavior of the real estate market in order to extract useful knowledge.

The developed integrated model has allowed us to conduct research of the residential real estate market in Yekaterinburg, identify patterns and perform some forecasts, the most interesting of which are the onset of market saturation effect with the increasing housing construction (Figure 10) and the effects of the increase in mortgage lending volumes (Figure 9).

In conclusion, we shall note that the proposed technique was demonstrated by the example of appraisal and prediction of the residential real estate market of Yekaterinburg, which refers to the developed cluster of Russian cities with the highest incomes and relatively high prices on the housing market. Similar studies and forecasts using the proposed technique can be made for other countries and cities.

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The Impact of Electoral Cycle Upon Local Public Expenditures in Case of Romanian Municipalities

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Abstract:

This paper addresses the link between level and structure of Romanian local government expenditures and electoral cycle, as well as spending interactions among Romanian municipalities. We have obtained the research results using general linear models with cross fixed-effects and time fixed-effects. We have also included mayors' political affiliation and some socio-economic factors in the proposed models. We have noticed increased public spending during election years, preceded and respectively followed by decreased spending in pre- and post-election years. Others findings revealed that mayors' political affiliation, other local administrative units' public spending policies and some socio-economic factors have had a significant influence upon Romanian municipalities' public expenditures.

Keywords: public interest, local public expenditures, electoral cycle, local spending externalities, mayors' political affiliation.

JEL Classification: C31, C58, H72.

Introduction

The public spending – electoral cycle relationship is a continuous subject of research, given that previous studies demonstrated both positive and negative inter-correlations. The allocation and use of public funds at central and local levels are a major concern for the public at large and individual researchers, as well as for politicians. The ongoing debate over the size, structure and efficiency of central and local government spending intensifies in the pre-election and election years. Taxation and resource distribution at a certain administrative level generate externalities upon other local jurisdictions.

The query we intend to answer is whether electoral cycle and mayors' political affiliation have influenced Romanian municipalities' public spending level. We have used a general linear model on a sample of 38 municipalities having a population of more than 50,000 inhabitants (excluding Bucharest Municipality) over a period of 14 years (1999-2012). To our knowledge, this is the first study ever done for Romania concerning the relationship between electoral cycle's phases and local expenditures, hereby contributing to the field literature.

Besides the introduction part, the paper is structured in five more sections. In section two we review the local government spending and electoral cycle concepts, in section three we introduce the Romanian local government sector's institutional structure, in section four we address research design and empirical models, in section five we are presenting the main results of our analysis, while section six concludes.

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Conclusion

As we proved in this article, the motivation for our research was related to several aspects. Firstly, we have tested the general perception that Romanian local elections were more or less influenced by precedent and election years' local public expenditures increases, either investment-oriented (usually for right-wing affiliated mayors) or socially-oriented (usually for left-wing affiliated mayors). Secondly, we consider this study important as it can assist Romanian voters in exerting their constitutional right with a better knowledge about the interests and motivations behind the actions of former and current mayors. Thirdly, the results can be of interest to local and foreign investors, as they can identify patterns of increase or decrease for public investments/consumption during different phases of the electoral cycles and have a better planning of their activity/investments.

Our paper has explored possible correlations between local public expenditures and the electoral cycle, as well as externalities generated by one public local administration's spending policy upon other administrations. Other researchers' findings confirm the existence of a connection between (local) public expenditures and political elections, generally for unconsolidated democracies. In what concerns the modification of public expenditures' structure according to electoral cycle, the results are notably different, with investment spending perceived as having the biggest electoral impact. The results generated allowed us to reach the objectives of our study. As such we have estimated and tested the influence of determining factors during various electoral phases of the 1990-2012 period upon Romanian municipalities' local public expenditures.

The ANOVA method allowed testing for the existence of significant differences in TE 's level over time. Subsequently, based on the general linear model, we have estimated and tested factors' influences upon TE 's, for different electoral cycle's phases and according to mayor's political affiliation.

One important result indicates a significant influence of precedent year's local public expenditures (indiscriminate of mayor's political affiliation) as well as of the other municipalities' expenditures (AE). Also, we have found that AE 's influence upon TE differs over time, according to electoral cycles' phases, being especially visible during the pre-election year, election year and post-election first year.

At the same time, we have discovered that unemployment rate determines an increase of local public expenditures, especially due to social security expenditures. The increased population density generates a decrease of the TE , as public utility expenditures do not increase at the same rate with population increase. This is normal due to the economies of scale.

The mayors' political affiliation revealed that the right-winged affiliation supports local public expenditures' increase (especially new public investments or continuing previously started ones) as compared to the left-wing mayors. Inclusion of fixed time-effects and cross-municipalities' effects revealed that right-winged affiliated mayors sometimes determined the decrease of local public expenditures (probably decreasing social protection expenditures).

The decentralization process started in Romania in 1998 has determined the transfer of certain responsibilities to local authorities with an obvious impact upon the local public expenditures' increase. The process has not yet resulted into a real democratization of the allocation and spending process at local governments' level as, quite often, the authorities send important amounts of funds towards dedicated voters and constituents as subsidies, social security and other forms of direct and indirect financial support. The practice of organizing referendums for important investment projects has not broken yet into the habits of Romanian local governments.

Our study main limitation refers to studying local public expenditures at an overall level rather for the different categories of budgetary expenditures (investments, social protection, and current expenditures). Our future line of study relates to differentiating for these types of budgetary expenditures and deepening the analysis of TE 's determining factors' influences. Another direction refers to increasing the study sample, including the communes which match the number of inhabitants' criteria (corresponding to the municipalities' population threshold) in order to test TE 's differences according to the urban or rural environment.

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Directions of Transformation of Labor Relations in the Modern Conditions

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Abstract:

Modern stage of development of society is peculiar by deep changes in all spheres of life activities. Relations between labor and employment are characterized by high level of uncertainty which requires full analysis and study, as well as development of adequate state policy of management. The purpose of this paper is to study directions of transformation of labor relations in the modern conditions and to develop recommendations for improvement of state policy in the sphere of labor and employment. These goals were achieved with the help of economic & statistical methods and methods of economic and comparative analysis. The practical developments were based on the following approaches: complex and structural & logical, expert, methods of comparison and modeling. The performed research determined directions for transformation of labor relations at the modern stage of development of society, change of labor motives and forms of population's employment. The process of formation and development of non-standard forms of employment in economy of the Russian Federation is studied, and recommendations for development of state policy of employment management are given which take into account the growth of "flexibility" of modern labor market as an objective process.

Key words: labor, labor relations, population employment, non-standard forms of population.

JEL Classification: J23.

1. Introduction

Development of society at the modern stage is characterized by fundamental changes that take place in all spheres of its life activities and in economy, in particular. It is considered that as of now, the global society has entered the stage of post-industrial development. This radical transformation is caused by significant increase of the role of innovations, new knowledge, and information. Intellectualization of economic environment, innovational entrepreneurship, and possession of information flows has become a basis for existence of highly efficient and competitive market economy.

Transition to post-industrial society influenced all aspects of labor activities. Human labor, as main production force, stops playing the leading role in the process of production. Deep transformations take place in individual's psychology, its labor, life values and needs, as well as conditions of life activities.

Under these conditions, forms of interaction between key subjects of labor suffer deep changes. Subject of labor is actively working, perceiving, and transforming individual or social group with conscience and will. In the modern conditions, subject of labor should conform to the following requirements: high level of development of professionally important qualities of personality; satisfaction with labor; adequate reflection of object of labor; development of self-regulation system; acquisition of socially developed methods of activities; development of the skills of self-evaluation, sense of self-esteem and self-respect.

The above requirements are caused by influence of transition of modern economy to innovational, post-industrial stage of development. Novelties in society lead to changes in economic relations, including labor relations. Labor relations are relations arising between people in the process of labor. However, it should be noted that during the whole historic way of human society development, labor relations and labor itself played the key role. Human constantly changes the conditions of his existence in labor, transforms them according to his developing needs, and creates the world of material and spiritual culture which is created by human to the same extent to which a human is formed by culture (Dorokhova, 2012)

Besides, labor is very important in the process of establishment and development of personality (Figure 1)

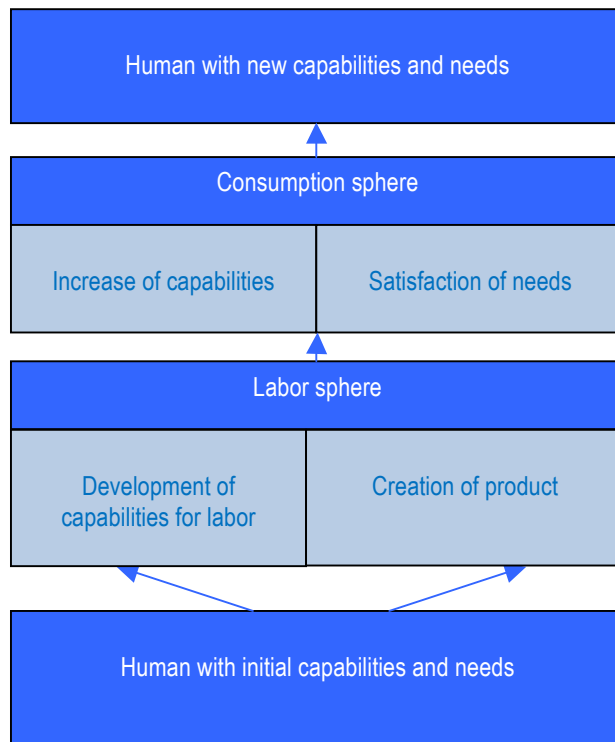


Figure 1 - Scheme of promotion of needs and capabilities of human in the process of labor (Dorokhova 2012)

Initially, labor plays an important role in the process of formation of personality depending on activities chosen by human; besides, the final results of labor determines well-being of society and satisfaction of own needs, including professional activities (Drobizheva *et al.*). Thus, it is difficult to overestimate the importance of the possibility to work for a particular human. Taking this possibility from human and perspective of transition to the status of unemployed leads to negative associative sense with human: absence of work, idleness, uncertainty in tomorrow, famine, and poverty.

Change of labor relations in the modern conditions and appearance of new forms of labor relations is expressed in the labor market in development of non-standard forms of employment.

Non-standard forms of employment are the form of labor relations with non-standard conditions of labor, work in the part-time regime on the basis of term contract at enterprise or organization. Non-standard employment includes such types of employment as: partial employment; temporary employment; casual employment; part-time employment; underemployment; overemployment; secondary employment; self-employment; employment in informal sector; borrowed labor (outsource, outstaffing, personnel lease) remote employment (Dashkova and Dorokhova 2013).

In the modern conditions, change of labor relations and employment and diversity of their forms turn into an important competitive advantage. With the development of society and economy, new forms of employment arise, which determined the capability of labor market to adapt to constant changes in economic, social, and institutional environment. Directions of transformation in the sphere of labor and employment are the key ones in development of economy and society and require thorough study.

Conclusions

It is possible to state that in Russian economy employment relations are not sufficiently diversified, and it determines labor market's capability to adapt to constant changes in economic, social, and institutional environment. Diversification of employment relations is negatively related to roughness of labor laws. The more the state tries to put labor relations into strict limits of standard employment, the lower is the competitiveness of labor force. For that, institutional environment should be more "friendly" regarding innovational changes in labor market.

It is obvious that under the conditions of growing processes of globalization and informatization, the policy of regulation of employment should take into account inevitable development of various types of non-standard employment at domestic labor market.

The following measures will help Russian Federation's transition to civilized relations in the sphere of non-standard employment.

Firstly, it is necessary to form common legal field for regulation of non-standard forms of employment. This will lead to amendments to the Constitution, Civil, Labor, Tax, and Criminal Codes, and a large number of other normative acts. Improvement of laws should be combined with support for scientific research as effective practices and perspectives and problems related to new characteristics of population's employment. There's necessity for support for Internet forums on these issues, as well as printed media.

Secondly, as a consequence of legal transformations, change of employment's institutional environment.

Thirdly, realization of a complex of measures aimed at transformation of motive in favor of increase of significance of moral and ethical values, namely: popularization of moral and ethical foundations of labor activities through realization of corresponding projects in mass media and the Internet; reduction of bureaucratic barriers in labor sphere; development of professional orienting work with the youth.

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The Influence of Regional Revenue on Government Investment and Its Implication to the Regional Economic Growth

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Abstract:

The aim of this study is to identify the determinants of the influence of regional revenue (RR) on government investment and its implication to the regional economic growth. Economic growth in Bekasi, Indonesia, is always above national economic growth such investment preparation linked to the RR. This research is limited on RR and its impact on economic growth in Bekasi. Variables studied focused on RR, government investment, and economic growth, was modelled based on Path Analysis approach. Then, the effectiveness of RR management in achieving sustainable economic growth in Bekasi enable to be evaluated economically, through local government investment.

Key Words: regional revenue, government investmen, economic growth.

JEL Classification: E22, H71.

1. Introduction

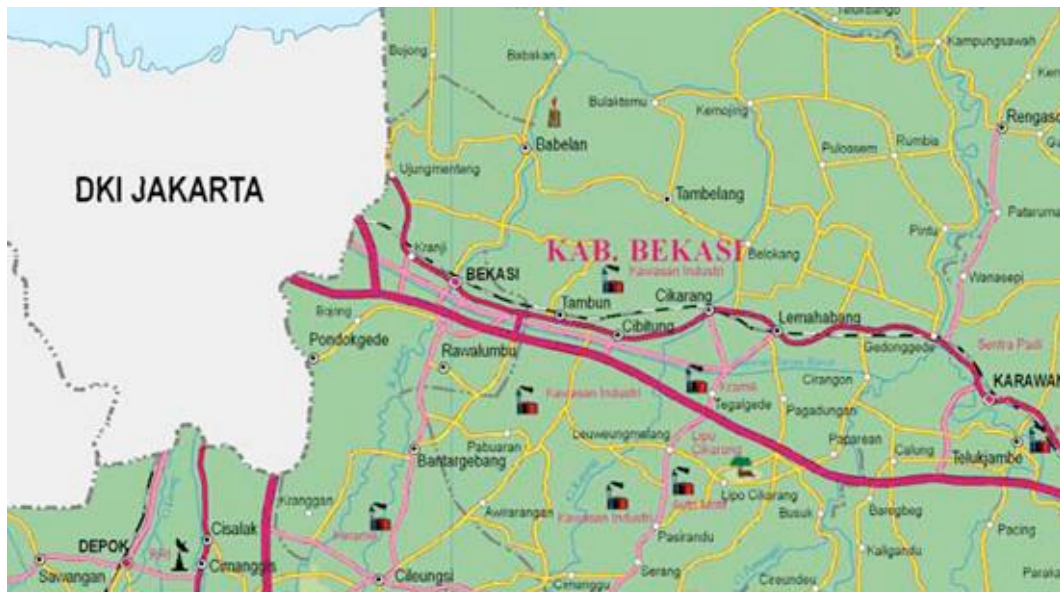
In the year of 2013, the Indonesian Gross Domestic Product have reached Rp 2770.3 trillion (US\$. 245,259.2 million/estimatelly) or about 5.78% increased than the previous year achievement. The highest economic growth was contributed by the transport and communication sectors with 10.19%; growth while the lowest growth experienced by mining and quarrying sectors as 1.34% (CBS 2011). By GDP total analysis, Java is still the highest contributing zone to Indonesian economy growth, then raised relatively as 57.99% in 2023 as well. Followed by Sumatra as 23.81%; Borneo as 8.67%; Sulawesi as 4.82%; Bali and Nusa Tenggara as 2.53%, and the remaining 2.18% contributed by Maluku and Papua.

There are three provinces in Java with the largest contribution to economic growth such as Jakarta, East Java and West Java. On the expenditure side, the highest economic growth was contributed by goods and services exports amount of 5.30%. Then successively by 5.28% of household consumption component; 4.87% of government expenditure components, 4.71% of Gross Fixed Capital Formation component 4.71%, as well as 1.21% of imported components as a deduction aspect.

As one of the highest economic growth province in Indonesia, West Java has a unique position in the national economic growth. This successful is certainly influenced by the strong government role, which succeed to coordinate all of its resources, even though at the other side there are many problems that challenging. Those are related with the opinion of Millner, Ollivier and Simon (2014, 84) that said "Many of the most important public policy problems require democratic country face cumulative effort by successive Governments to be successfully managed". Relavance opinion comes from, Gelb A *et al* (1999) stated that Governments in developing countries should, and do, provide valuable goods and services which generate a derived demand for production factors. However, public sector differs from private sector in the extent to which it is subject to political pressures for employment.

Besides having the largest population in Indonesia, West Java province is also directly adjacent to the capital of the country, namely Jakarta. Among the 27 districts/ cities in West Java province, 6 areas were located in the *Jabodetabekjur* area namely: Bogor district, Bogor city, Depok city, Bekasi district, Bekasi city, and Cianjur district. Similarly, among 11 autonomous administrative regions located in *Jabodetabekjur* regions, West Java province contribution is relatively larger than Jakarta and Banten. Overall, those administrative autonomous regions, consisting of 3 Provincials Government (DKI Jakarta, West Java and Banten) and 8 Regencies/Cities Government (Bogor regency, Bogor city, Depok, Tangerang regency, Tangerang City, Bekasi regency, Bekasi city, and Cianjur Regency).

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Source: Google Map

Figure 1 - District of Bekasi, Province of West Java, Indonesia

In the year of 2013, West Java Province experienced economic growth of 6.06% over the previous year (Statistic Bureau Center/BPS of West Java Province 2011). This growth was relatively higher than the national economic growth. Growth occurred in all sectors, except mining and quarrying, which felt down by 0.66%. The highest growth occurred in the transport and communications sector, which amounted to 9.66%. On the expenditure side, the highest economic growth was contributed by goods and services exports, which amounted to 10.06%.

Then successively, followed by components of Gross Fixed Capital Formation 6.60%, 5.51% of government expenditure, 4.02% of household consumption; 0.61% of inventory change and imported components as a deduction instruments, grew by 12.65%. Relatively, it appears that the growth of government spending components in West Java Province is larger than the growth of the national component of government spending. Similarly, it appears that the growth of government spending components in West Java province is greater than the growth in household consumption component. This show that government contribution in West Java in promoting region economic growth is relatively higher than the contribution of other economic actors.

As the fourth largest city in Indonesia, Bekasi City has an important position in development cooperation in the *Jabodetabjur* as a dynamic region as well as the highest social and economic activity issues in Indonesia. The rapid development of Jakarta as the State Capital, causing spill-over city development into the surrounding area, so there was a wide range of over the designation function in cities around Jakarta, including Bekasi city. Recently, Economic growth in Bekasi which in 2012 amounted to 6.85% (Statistic Bureau/BPS, Bekasi 2013).

Growth occurred in all sectors, except mining and quarrying. Consecutive economic growth in sectors that experienced, growth in Bekasi are: the building sector, which amounted to 12.09%; financial, rent, and services sector companies 8.64%; electricity, gas and water 8.54%; trade, hotels and restaurants 8.11%; the industrial sector 6.25%; the services sector 6.23%; transport and communications 3.27%; and the agricultural sector 0.24%.

In the last period, year to year economic growth in Bekasi is always above the economic growth of West Java province and national economic growth. This is due to local governments' intervention to facilitate trade activities, proved to be the biggest growth in the service and trade sector. As Hornok and Koren (2015: S110) discloses that "They hope to increase of trade volumes without endangering government revenues by reducing inefficiencies", bring the authorities idea to develop trade sector to boost economic growth in Bekasi City.

In promoting economic growth, local governments have a very important role which is conditioned by how do local governments could be able to manage the region financial potentialily. Jhingan (2003, 67) argues that one of the factors that may affect economic growth is capital accumulation or investment, whether by government or society. If there is greater investment program, it will encourage an increasing production of goods/services activity then will stimulate national or regional production.

One of investment instrument is capital expenditure (Mankiw 2003, 453), government investment was sourced from revenues excess over government investment as government saving. Thus, government savings show the government investment capacity that potentially could be done. While government investment shows the investment amount that realized by the government.

The economy of our state and the related health and social processes have been extremely deeply impacted by the ongoing globalization and the global crisis, which exposed the so-called "unsustainability" of various concepts with elements of minimal state involvement (Gavurova and Grof 2016). Region economic growth strongly related with variety of factors, inter alia, an investment in the certain regions, in particularly local governments investment. Local government investment which is not well prepared neither implemented by consistently and effectively as well, will impact on unexpected economic growth. Based on the region financial potential outlook, investment preparation by local governments investment closely linked to the local income, particularly RR and the Government Investment

In order to stimulate RR, required an effective local financial potential management so that can increase RR and allocate it base on economic development plan priorities and expected targets economic growth There is no define how RR could be able to influence government investment as well as the effect of both variables on regional economic growth, particularly in Bekasi city.

This research is limited on RR and its impact on economic growth in Bekasi, directly or indirectly through government investment. Variables studied focused on RR, government investment, and economic growth. As for influence between variables was modelled based on the structural model approach through Path Analysis. By using Path Analysis, the effectiveness of RR management in achieving sustainable economic growth in Bekasi enable to be evaluated economically, through local government investment, either directly or indirectly.

Conclusion

- Regional Revenue (RR) is a determinant factor of the increasing government investment in Bekasi and has a positive influence on the direction of government investment. The higher RR will affect the higher Government Investment, then RR contribution influence are relatively very strong and significant.
- RR and the Government Investment are not determining growth factor in Bekasi. RR and Investment Government together as well as individually do not significantly influence economic growth. Contributions effect of the two together is weak and insignificant. Individually, although the direction of the influence of both positive, *i.e* those the higher of regional revenue and government investment, economic growth, but the contribution effect is not significant.
- Overall, the high-low economic growth in Bekasi more influenced by external factors other than the Local Revenue and the Government Investment. The findings of this study indicate that RR and local government expenditure (government expenditure), the government investment, has not much role in encouraging economic growth in Bekasi. The role of government investment, potentially getting lower than local revenue.

Then, there are two suggestions be proposed, such as:

- It is recommended to the administrator of Bekasi to maintain their independence in empowering RR as government investment decisions base. The local government also advised to more intensively explore the potential of RR and increase government savings and investment through government consumption efficiency.
- It is recommended for local governments to improve the accuration of the investment objectives and autonomous investment that can drive economic growth in the region through infrastructure development priorities that facilitates regional economic activity. It also includes private investment in regional development and facilitated by developing a conducive investment climate through bureaucratic efficiency.

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Application of the Analytic Hierarchy Process to Structure the Motivational Expectations of the Economically Active Population of the Republic of Crimea

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Abstract:

Based on an analysis of the dynamics of labor relations, the article studies the structure of motivational expectations of the economically active population of the Republic of Crimea. The authors have justified the use of Saaty's Analytic Hierarchy Process when constructing models of motivation under conditions of economic modernization. The results of structuring motivational expectations of the economically active population of the Republic of Crimea make it possible to perform a realistic assessment of motivational preferences in various segments of the labor market in the region. The obtained results provide possibility for the formation of a regional socio-economic policy of employment, taking into account the transformations in the Crimean labor motivation system.

Keywords: motivation, motivational expectations, analytic hierarchy process.

JEL Classification: J01, M54, O15, P25.

Introduction

Current transformation processes in the socio-economic development of the Republic of Crimea determine changes in the system of motivation. Implementation of the policy of modernization of the regional economy implies the structural transformations in motivational expectations of the economically active population of the Republic of Crimea. Of course, it is important to study the structure of motivational expectations of the different segments of the labor market in order to create a regional socio-economic employment policy, taking into account the transformations in labor motivation system of Crimea.

Work motivation is a phenomenon that is the subject of interdisciplinary study, as an effective increase in motivation of the economically active population is practically possible only with the use of the achievements of the psychological, sociological and economic sciences. In recent studies on motivation, the analytical issues of structuring and modeling the behavior of an individual are actively studied in order to increase the labor productivity. The relevance of the application of AHP in the study of management and economic processes is determined by the need for structuring a specific process in order to prioritize tasks and assess them afterwards.

Conclusion

Structuring of motivational expectations of the population of the Republic of Crimea in the context of economically active and inactive population has made it possible to identify among a variety of the proposed to respondents' criteria those that have the greatest impact on the motivation level: salary, bonuses and allowances, social security guarantees, working conditions, opportunities for self-realization, training and development, corporate culture and team spirit. The criteria selected for the analysis cover a complex of possible forms and methods of motivation, forming motivational environment, which has made it possible to consider the three options as alternatives: the material forms of motivation, the application of non-material forms of motivation or the use of combined forms of motivation.

In terms of certain categories of economically active and inactive population of the Republic of Crimea, the analytic hierarchy process tools have made it possible to: determine the significance of the criteria; explicate motivational expectations when determining the most preferred forms and methods of motivation to enhance the work behavior of the population category under study; identify and assess the potential of different forms of motivation to improve the motivation of categories of the population involved in the study.

The assessment of consistency of respondents' opinions has determined that the structure of motivational expectations for the categories of the employed and unemployed population is relatively homogeneous. The structure of the motivational expectations of the economically inactive population has much in common with those of the economically active population, but there are features related to the interpretation of the results of analysis of the importance of the "bonuses and allowances" criteria, the importance of which for the economically inactive population is significantly lower than for the employed and unemployed people. The "working conditions" criterion ranks second in terms of importance for the economically inactive population while for the employed and unemployed people this criterion is at the penultimate place in the importance terms.

The significance of material forms of motivation is high for the economically active population, and for employed people this value is significantly lower than for the unemployed category (0.38 and 0.57 respectively). The potential of the increasing the level of motivation for the employed and unemployed population through the use of non-material forms of motivation or combined forms of motivation is almost equal (0.32 to 0.3 and 0.21 to 0.22 respectively).

For the category of economically inactive population, the potential of the application of material motivation forms is the lowest one. Intangible forms are a top priority, combined forms of motivation rank second (0.61 and 0.27 respectively).

According to the results of the analysis, we can conclude that the analytic hierarchy process is a tool that provides possibility to get valid results when structuring the motivational expectations, as due consideration is paid to the importance of each criterion of the system formed in the first stage of the research; the opinions of respondents, the answers of which are not compatible with each other or contradictory, are not considered when performing calculation; this process make it possible to accurately structure motivational expectations for the team studied, the labor market segment or the whole society that enhances the relevance of the data in terms of further research or applying them in practice.

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Development of the Socio-Economic Characteristics and Standardised Death Rates of the European Union Member States

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Abstract:

Gross domestic product per capita and the health expenditure per capita of the European Union Member States are strongly a positively correlated. The convergence process of the GDP and health expenditure per capita was stronger before 2009, before economic crises began to influence the economies. Health expenditure (HE) per capita increased more intensively between 2000 and 2014 than the GDP per capita, which resulted to a higher ratio of the HE per capita to the GDP per capita. In countries with a high living standard and a high level of HE per capita lower standardised death rates (SDR) in total and SDR for some of the non-communicable diseases were typical. The lowest SDR for most of the non-communicable diseases (NCD) were achieved at the Mediterranean Islands of Cyprus, Malta and also Portugal. The Mediterranean diet can be one of the main factors that caused the best status of lowest death rates in selected NCD.

Keywords: cluster analysis, principal component analysis, standardised death rate, GDP per capita, health expenditure per capita.

JEL Classification: C38, I10, I15.

Introduction

Socio-economic development of the European Union (EU) Member States belongs to the main goals of the policy makers in the candidate countries. Gross domestic product per capita is often used as a measure of standard of living. We expect that there exists an association between the living standard and the public health outcome. Public health is a one of the components of sustainable development. Society in good health represents added value for the economy and social development (Sustainable development in the EU, 2015). Sustainable development and public health quite strongly correlate, being connected and conditioned by one another (Seke *et al.* 2013). Public health spending increased intensively in the past and healthcare spending will increase in the nearest future for example due to the population aging. Also, a bad life style of population can result in an increase of health expenditure due to increased morbidity and mortality. The non-communicable diseases (NCD) are strongly associated with the life style of population (Brummer 2009). The most risk factors of the NCD are obesity, poor diet, alcohol consumption, smoking, lifestyle with no or irregular physical activity (Liu *et al.* 2012, Cohen *et al.* 2006, Hu *et al.* 2001). The impact of NCD in population extends beyond mortality with large financial consequences (Muka *et al.* 2015). The aim of our paper is to discover the association between the selected socio-economic variables and standardised death rates of some diseases.

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Conclusion

Gross domestic product per capita is positively and significantly correlated with the HE per capita of the EU Member States. The real increase of the HE was stronger than the growth of the GDP per capita which resulted in an increase of the ratios of HE per capita to the GDP per capita. According to the coefficient of variation the convergence process of both variables was positive. Using cluster analysis tools, it was discovered that the clusters were usually composed of either "old" or "new" Member States. Only exceptionally the "new" Member State joined a cluster with "old" Member States. The clusters with "old" Member States can be characterized as clusters with a high living standard, high HE per capita but also with lower SDR in total and lower SDR of some chronic diseases. For the clusters of "new" Member States are typical lower levels of GDP per capita, HE per capita and higher SDR of some analysed diseases. Hungary is the only country that in all analyzes periods created a separate cluster. Hungary achieved the worst results in terms of very high SDR compared to other clusters. Bad living standard can radically influence morbidity and mortality of the population. The Mediterranean diet is well known as a healthy kind of eating and this could be one of the reasons while the Mediterranean islands of Cyprus, Malta and also Portugal despite of lower GDP and HE per capita had the best outcome in terms of lowest standardised death rates of almost all diseases in our analysis.

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Intellectual Data Analysis of Production Profitability Influence on the Competitiveness of Construction Enterprises

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Abstract:

The article is devoted to the development of market relations in a construction sphere and development of competitive relations that are important factors for development of methods for competitive estimation of construction enterprises. The competitiveness of a construction enterprise characterizes competitive advantages and disadvantages that are crucial aspects for making effective management decisions and working out organization development strategies. Competitiveness development in the market of fixed assets construction is one of the main tasks of government policy. That's why competitive estimation of an enterprise is important either for a particular organization or for government in general. The questionnaire results among construction organizations directors of Chelyabinsk, Sverdlovsk and Moscow regions in 2015-2016 are represented in the article. The authors offered an economic and mathematical model based on intellectual analysis of product profitability in construction enterprises. They put forward and disproved theories of various factors influence on the competitiveness of construction enterprises. The authors analyzed research results and drew conclusions about an application of the offered technique and further approach of scientific research.

Keywords: intellectual analysis, profitability, competitiveness, construction, company, products, index.

JEL Classification: D40, D41, L74.

Introduction

The development of market relations in construction sphere and development of competitive relations prove the importance of estimation methods of construction organizations competitiveness (Kruglov 1998). The competitiveness of a construction enterprise characterizes competitive advantages and disadvantages that are crucial aspects for making effective management decisions and working out organization development strategies (Ugryumov and Shindina 2016). Development of competitiveness on the market of fixed assets construction is one of the main tasks of government policy. That's why the competitive estimation of an enterprise is important either for a particular organization or for government in general.

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Conclusion

In the resulting regression equation, there are indicators with negative coefficients which prove a reverse connection between the independent variable and the resulting one. Indicators with the highest negative values are the turnover rate (-7.675) and discretion in the use of resources (-7.252). This means that it is necessary for a construction company in its activity to pay special attention to these indicators because they are very sensitive to changes and can seriously reduce the outcome (result) indicator of the competitiveness that is the production profitability. According to the regression equation, the equipment supply with 13.77 coefficient influences the production profitability most. It is the improvement of the technical level of construction machinery and equipment that can significantly increase the production profitability.

Summarizing the study, it should be noted that the calculated regression equation allows us to objectively evaluate the competitive position and the competitiveness of the construction enterprise in general, as well as to identify its strengths and weaknesses. An adequate assessment of the competitive position and competitiveness shows the real condition of an object under the research, which eventually helps to choose the right strategy for further development.

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Offshoring Intensities and Skill Upgrading of Employment in the Slovak Republic

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Abstract:

Offshoring representing one of the main characteristics of the current stage of globalization contributed to reduction of the demand for relative unskilled workers resulting in falling wages of unskilled labor in developed countries. The shift away from low-skilled workers is driven by offshoring to Central and Eastern Europe (CEE) countries. However, the Slovak Republic, like other European countries experienced considerable skill upgrading of employment over past decade. The study of intertemporal sectorial development of employment and growth rate of person engaged clearly indicates a change in the structure of employment. Therefore, it is interesting to examine how offshoring and domestic outsourcing influences these trends. In order to estimate the impact of offshoring on skill structure of labor demand in the Slovak Republic the system of cost share equations will be derived from translog cost function. The equations for different cost shares are estimated using seemingly unrelated regression (SUR). Our results indicate that offshoring contribution to the change of employment share in case of low and medium skill-levels was negative while positive for high-skilled labor demand.

Keywords: offshoring, outsourcing, employment, translog cost function, skill level.

JEL Classification: J31, F14, F16.

Introduction

International fragmentation of production, as a new phenomenon of last few decades, emerged together with intensified distribution of value added within production chains across countries. While the territorial proximity or common trade areas are still considered as crucial determinants of this process, their importance is generally decreasing during the period of the last 15-20 years (Ederer and Reschenhofer 2014). Narrow trade linkages among the Euro Union member countries represent one of the key implications of deeper economic integration in Europe. Intention to examine substantial characteristics of mutual flows of production among individual countries significantly increased since the establishment of the Euro Area due to growing current account imbalances between North and South of the Euro Area (Belke and Dreger 2011). As a result, mutual linkages among national productions can be also examined according to their contribution to external imbalances (Ederer, Reschenhofer 2014). Some authors analyses flow of goods and intermediate goods within the global supply chains, volumes of cross-country flows of production employed in domestic production that is subsequently exported abroad. Relationship between participation of a country in these flows and the overall advancement of the country can be also examined considering the role of regionalism in these production chains with clearly identified regional centers and regional structure (Baldwin and Lopez-Gonzalez 2013). Increasing interdependence associated with international fragmentation of production also affects business cycle synchronization among countries (Ng 2010, Takeuchi 2011, Amighini 2012).

Declining coordination and transport costs caused that production processes increasingly fragment across borders. This fundamentally alters the nature of international trade, away from trade in goods towards trade in tasks and activities, with profound implications for the geographical location of production, the patterns of gains from trade and the functioning of labor markets (Feenstra and Hong 2007).

In this paper, we examine impact of offshoring on skill structure of labor demand in the Slovak Republic, one of the CEE countries. The industry level data indicate considerable skill upgrading of employment over past 14 years. The share of workers with low education has fallen between 1995 and 2009 from 9.5 to 3.8%. There is also evidence of increased offshoring and decreased domestic outsourcing for the Slovak Republic. We estimate the system of cost share equations derived from translog cost function. The equations for different cost shares are estimated using seemingly unrelated regression (SUR). The data covers period 1995-2009 and come from World Input–Output Database (WIOD) database.

The paper is divided into six sections. Following the introduction, the relevant empirical literature is reviewed in Section 2. In Section 3 we provide a description of facts regarding skill upgrading in the Slovak Republic. In Section 4 we provide a brief overview of model that we employ to examine the impact of offshoring on labor demand. In Section 5 we discuss main results. Finally, concluding remarks are made in Section 6.

Conclusion

Offshoring is frequently used for explanation of employment upgrading and a reason for reduction of the demand for relative unskilled workers. The main objective of this paper was to examine how offshoring and domestic outsourcing affects the trends in labor demand over the period 1995-2009. The offshoring intensities was computed as the share of imported intermediate in value added creation and domestic outsourcing as the share of domestic intermediate use in value added. A system of cost share equations derived from translog cost function was estimated using SUR technique.

The Slovak Republic, like other European countries, experienced considerable skill upgrading of employment over past decade. The study of intertemporal sectorial development of employment and growth rate of person engaged clearly indicates a change in the structure of employment in the Slovak Republic. The growth of jobs requiring the medium and high skilled workers increases the demand for high skilled labor.

According to the results of the estimations for all sectors, the contribution of offshoring to the change of employment share in case of low and medium skill-levels was negative while it seems to be positive for high-skilled labor demand. When consider the regression coefficients the results showed that the medium-skilled labor was hit hardest by offshoring. The coefficient for low-skilled labor for both offshoring and domestic outsourcing we found insignificant.

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APPENDIX 1

Table 8 - Industry classification in WIOT

Industry Name	ISIC Code
TOTAL INDUSTRIES	TOT
AGRICULTURE, HUNTING, FORESTRY AND FISHING	AtB
MINING AND QUARRYING	C
FOOD, BEVERAGES AND TOBACCO	15t16
Textiles and textile	17t18
Leather, leather and footwear	19
WOOD AND OF WOOD AND CORK	20
PULP, PAPER, PAPER, PRINTING AND PUBLISHING	21t22
Coke, refined petroleum and nuclear fuel	23
Chemicals and chemical	24
Rubber and plastics	25
OTHER NON-METALLIC MINERAL	26
BASIC METALS AND FABRICATED METAL	27t28
MACHINERY, NEC	29
ELECTRICAL AND OPTICAL EQUIPMENT	30t33
TRANSPORT EQUIPMENT	34t35
MANUFACTURING NEC; RECYCLING	36t37
ELECTRICITY, GAS AND WATER SUPPLY	E
CONSTRUCTION	F
Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of fuel	50
Wholesale trade and commission trade, except of motor vehicles and motorcycles	51
Retail trade, except of motor vehicles and motorcycles; repair of household goods	52
HOTELS AND RESTAURANTS	H
Other Inland transport	60
Other Water transport	61
Other Air transport	62
Other Supporting and auxiliary transport activities; activities of travel agencies	63
POST AND TELECOMMUNICATIONS	64
FINANCIAL INTERMEDIATION	J
Real estate activities	70
Renting of m&eq and other business activities	71t74
PUBLIC ADMIN AND DEFENCE; COMPULSORY SOCIAL SECURITY	L
EDUCATION	M
HEALTH AND SOCIAL WORK	N
OTHER COMMUNITY, SOCIAL AND PERSONAL SERVICES	O
PRIVATE HOUSEHOLDS WITH EMPLOYED PERSONS	P

Economic Practicability Substantiation of Financial Instrument Choice

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Abstract:

When forming investment portfolio of a sovereign fund it is very important to choose the goals which allow taking into account any risks, preferences and restrictions, principles and financial instruments which consider the requirements to the portfolio managers. While substantiation of regulation about the risk level reduction by investment fund portfolio diversification there is developed a hypothesis.

The portfolio modern theory defines the practicability of operations with financial assets by two interrelated characteristics "profitability – risk". To decrease the characteristics of risk there are implemented investment decisions which consider portfolio diversification taking into account redistribution of invested sum between different kinds of assets. But for all that it is possible to consider the following statement to be wrong: if every portfolio asset is determined by dispersion of profitability, then the profitability of the portfolio has dispersion which depends on its composition. On this hypothesis there is developed an assumption: while portfolio forming, an investor can choose any combination of investment decisions, whereby expected return and standard derivation (risk) of the portfolio are the best. To prove it there were carried out researches of used financial instruments diversification (three groups): assets of the biggest world companies which are in the rating FT Global 500, precious metals which have London Gold Market Fixing Ltd. quotations and property in Germany, Russia, Spain, Switzerland and the USA. Structured common portfolio of investment fund on financial assets of three groups corresponds to profitability rate 4,18% from the biggest world companies shares, 0,13% from gold and 0,82% from property in Germany. Criteria of accepted risk vary from 0,093535962 to 0,006718239 and fulfill conditions of efficient equity frontier parameter adherence.

The most important factor while estimation of sovereign funds management is the principle of maximum actions transparency. At the same time, it has to be implemented to all kinds of world sovereign funds. In the world economy, the majority of investment transactions are imposed by revenue-based levy (capital gain), thereby it increases operational expenses, besides levy can influence expected profitability level of investors. The differences in assets levy in different countries stimulate investors to choose the portfolios with grace variant of levy.

Keywords: investment assets of sovereign fund, revenue-based levy, profitability of financial instruments, global economics, investment policy.

JEL Classification: O47, P45, P47.

Introduction

Specific conglomerates represented by banks, trade and manufacturing corporations, insurance companies are principal members of international financial markets. The most popular are represented as hedgefunds which are like private investment funds. The peculiarity of their functioning is the absence of statutory regulation or subjection to weaker regulation from the government, inaccessibility for general public. As a rule, such funds service very prosperous clients who manage the money of qualified investors, their bankruptcy doesn't cause serious negative social consequences. That's why these organizations are free from the majority of financial regulation standards and use almost unlimited financial instruments and risky investment, arbitral and speculative strategies in their policy.

Sovereign funds (funds of national welfare) are a specific group of international financial market participants. Such funds are created in countries with stable trade balance surplus which is connected with export of hydrocarbon (Norway, Russia, Saudi Arabia, the United Arab Emirates) or non-raw material export (Chinese People's Republic, Singapore, Australia) for further investment including foreign assets. Such funds are created for the following aim: to make a financial "safety bag" for the government while the decrease of world prices on export goods or the demand on them and also to prevent economically unjustified strengthening of national currency which can lead to the imbalance of economy in the country. According to their policy sovereign funds adhere to different strategies in order to fulfill investment portfolio diversification. Some funds adhere to conservative policy of money investment by way of investment in reliable bonds and less by way of investment in the biggest companies' assets. Other sovereign funds use more aggressive investment policy and invest in different financial instruments of not so big companies, property and hedgefunds.

It's necessary to note that the theory of portfolio investment was worked out for the first time in the 50^s of the 20th century. Using mathematical algorithm Markowitz Harry M. defined the most profitable ways to register the assets portfolio structure and to minimize its cost in accordance with expected risk value or to minimize the risk with prescribed value of expected return (with risk tolerance) which is comfortable for an investor.

Grounding on the hypothesis of effective market building Sharpe William F., an American economist, formed an assumption that market factors have an influence on financial instruments profitability. In this connection being the adherent of passive investment he defined the following regularity. It isn't possible to get excess profit on effective market thus it makes any investment portfolio management not useful and effective by investment first of all in share investment funds. A worked out, capital asset pricing model (CAPM) is a theoretical base for future profitability of fund asset portfolio forecasting. However, the use of such model has a number of restrictions. Particularly the influence of financial non-transparency of market is not taken into account. Thus Richard Roll, an economist, was sure that it isn't possible to examine CAPM model as nobody can really observe expected return but only its average value. It isn't possible to get to know if the proportion in the model is really right. At the same time, there are zero transaction costs and zero levy rates in CAPM model. Also, every transaction is followed by expenses, in particular by transaction costs. Using CAMP model, it is meant that an investment isn't imposed by levy and the levy doesn't influence investment.

However, in the world economy the majority of investment transactions are imposed by levy (capital increase) thereby it increases operational expenses. More than that the levy can influence expected level of return for an investor. The differences in assets levy in different countries stimulate investors to choose portfolios with grace variant of levy.

In the theory of random processes investment economists J. Cox, Jonathan E. Ingersoll Jr., Stephen A. Ross concluded analytical forms of rational investor behavior characteristics taking into consideration the factor of random interest rate or project costs on the assumption that other parameters are constant. The sense of this model is that an investor at a starting moment t invests 1 dollar in order to get 1 dollar in real terms at moment $t + T$. Thus, financing of one project doesn't influence other investment projects or potential investor's possibilities.

All mentioned models are the most important developing stages of the theory about the high possibility to model and foresee investment portfolio structure of sovereign fund. At the same time the majority of investment decisions are based on the following basic assumptions:

- investments are often fully or partially irrevocable if an investor in any period of time after the beginning of the investment process wants to return invested money;
- the value of expected reward in invested money isn't specified. In this case an investor can get probabilistic characteristics which can influence investment attractiveness of an investment portfolio;

- investors have certain freedom of time in relation to decision-making time in the exercise of investment process, or they can put it aside till the moment they get additional information which will be available in the future.

Conclusion

On the basis of generated hypothesis about the investor choice in forming the portfolio of any combination of investment decisions, in which the expected profitability and standard deviation (risk) of portfolio is the best, the conducted research on the diversification of used financial instruments of three groups (assets of the biggest world companies which are in the rating of FT Global 500, precious metals which have London Gold Market Fixing Ltd. quotations and property in Germany, Russia, Spain, Switzerland and the USA) allowed to formulate the following conclusions.

1. Having regard to shares of the eight biggest world companies the final values of covariance dependencies allowed to include only the securities of three companies in the portfolio: Apple (risk indicator was 0,145026849, profitability indicator was 0,062184534), Wells Fargo (risk was 0,103856026, profitability was 0,034142577) and Johnson@Johnson (risk was 0,058501221 and profitability was 0,021045751)

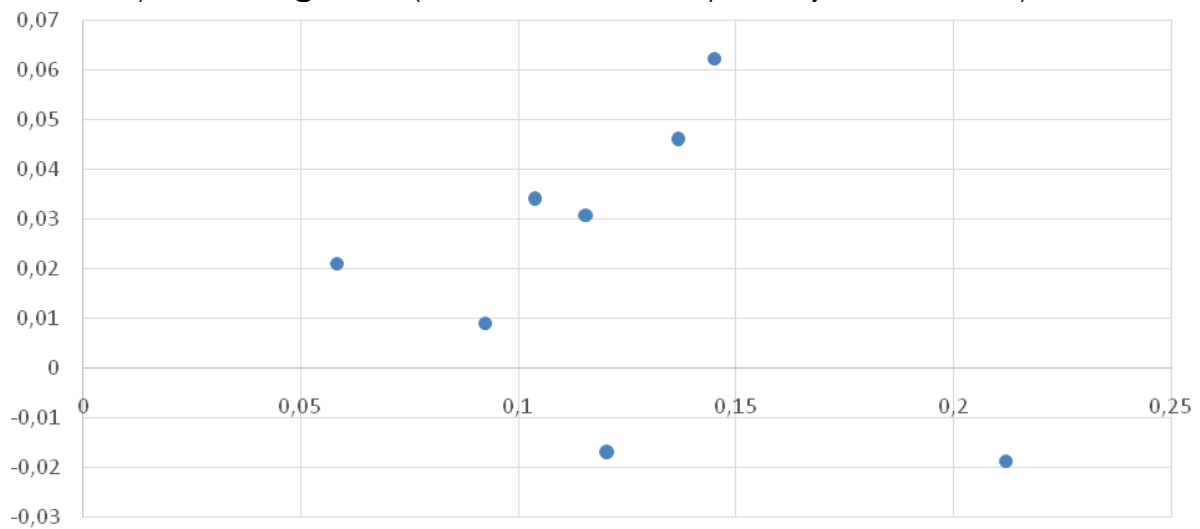


Figure 2 - Functional dependency of a pair of «risk - profitability» of Apple, Wells Fargo and Johnson@Johnson stocks

Thus, it's optimal to recognize Apple and Wells Fargo stocks while observing setting of effective boundaries of equality for the investment portfolio according to the minimal risk criteria for a given value of profitability. In this case, the equation taking into account the covariance coefficients would be:

$$\sigma_p = \sqrt{0,020156 * \omega_1^2 + 0,008986 * \omega_1 * \omega_2 + 0,010337 * \omega_2^2} \quad (6)$$

The portfolio formed from stocks of the noted companies (Apple share is 0,27; Wells Fargo share is 0,73 for a minimal risk) shows the profitability of 4,18%.

Having regard to precious metals (according to Table 4) the average value of investment profitability in platinum is negative, and taking into account the calculated indicators, the values of covariance coefficient of the financial instrument «silver» 0,027929 is more than others, that indicates a greater risk of such investments (Table 9). Thus, «gold» is the most effective asset of investments.

Table 9 - The values of covariance coefficient of precious metals, which have London Gold Market Fixing Ltd. quotations

Indicators	Gold	Silver	Platinum
Gold	0,006756		
Silver	0,010378	0,027929	
Platinum	0,005031	0,013009	0,009657

Speaking about property in Germany, Russia, Spain, Switzerland, and USA the obtained negative covariance coefficients show the contrary profitability ratios change of investment in real property subject to the inclusion of these objects in a single asset of portfolio (Table 10).

Table 10 - The values of covariance coefficient of property in selected countries

Indicators	Germany	Russia	Spain	Switzerland	USA
Germany	0,000043				
Russia	-0,000053	0,003082			
Spain	0,000027	0,000037	0,000097		
Switzerland	-0,000003	-0,000004	0,000002	0,000026	
USA	0,000032	0,000205	0,000021	0,000002	0,000142

Thus, property in Spain is excluded from the most optimal investment in view of the negative average value of profitability (Table 4). The covariance dependence on property between Germany, Russia and Switzerland shows the highest degree of risk when placing in the same portfolio, and property in USA has the riskiest prospects (the biggest covariance coefficient except Russia). Consequently, the inclusion in the total portfolio of investments in German property is the most optimal for this type of financial assets. The profitability index was 0,82% with a minimal risk in the amount of 0,006718239.

Consequently, the total portfolio of the formed investment fund according to the structure of financial assets subject to the parameters of the effective equality border takes the following form (Table 11).

Table 11 - The structure of the investment fund, corresponding to the optimal criterion «risk - profitability»

Structure of portfolio	Profitability, %	Risk, share
Apple and Wells Fargo shares	4,18%	0,093535962
Precious metal - gold	0,13%	0,083960654
Property in Germany	0,82%	0,006718239

It should be noted that investments aimed at developing the economy, especially, investments in import-substituting technology, in infrastructure and other capital-intensive investments are characterized by low or even negative investment profitability and also by longness of a payback period. It's necessary to assess the effectiveness of public projects to evaluate the long-term and low-risk projects. At the same time the job gains in the territory, where the project is implemented, the average salary of employees in the implementation of this project and exceeding the average level of wages over wages in other sectors will characterize the public efficiency. When assessing investment funds, it's necessary to consider whether the chosen direction of investment corresponds to adopted long-term economic strategy of development of the country or plans of diversification.

The factor of ensuring the maximum transparency of their activity is the most important criterion for evaluation of sovereign funds management, which should be applied to all types of the world sovereign wealth funds. The growth of sovereign wealth funds and the amount of finance accumulated in them, attracts attention in view of the fact that the funds may have a significant impact not only on the stock markets, but also on the economy of the country. Foreign investments of sovereign funds may affect national security, because the purpose of the investment may be obtaining control over the strategically important industries and technologies. Consequently, the applicable principles should correspond to the fundamental positions: maintaining a transparent and stable organizational structure of fund management, involving the proper operational control and the nature of risk management; enforcement of legal rules for the disclosure of information in countries where sovereign wealth funds make investments; procedure of investment, taking into account the economic and financial risk and profitability factors; contribute to the stability of the global financial system and free flow of capital and investment.

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Time-Varying Beta of Russian Companies

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Abstract:

This paper examines the dynamic beta of Russian companies within the framework of the market model. The closing weekly prices of 29 Russian stocks, six Russian sector indices and the MICEX Index as a market index during the period from January 2009 to June 2015 are used to estimate time-varying beta using various econometric techniques. According to the results for the analyzed period, semiparametric regressions are confirmed to be the most effective model. As regards the forecast period, multivariate GARCH models surprisingly outperform all the other methods. An analysis of beta dynamics shows that most of time-varying betas are non-stationary.

Keywords: time-varying beta, russian stock market; DCC-GARCH model; Kalman filter; semiparametric regression.

JEL Classification: C14, C22, C58, G10, G12.

Introduction

In classic market and CAPM models (Markowitz 1952, Sharpe 1964, Lintner 1965) beta coefficient reflecting stock sensitivity to market portfolio is assumed to be constant over time. Within the framework of these models, beta is estimated by regression analysis, where asset returns is a dependent variable and market returns is a regressor. Thus, beta is the covariance between the market's returns and the asset's returns divided by the variance of the market returns. However, the OLS method of constant beta valuation has been criticised on numerous occasions. In particular, it was found that financial assets and market index volatility strongly varies over time (Bollerslev, Engle and Woolbridge 1992), thereby directly impacting beta values.

Beta represents one of the key financial indicators used for the valuation of companies and projects, target price estimation, risk assessment and evaluation of portfolio managers' performance. Analysts and investors use beta as a framework for fundamental analysis (DCF, DDM, LBO, etc), stock selection, hedging strategies and quantitative modeling. The study of beta and its features contributes to a better understanding of financial market mechanisms and can be useful in operations conducted by stock analysts, portfolio managers, investment bankers and hedgers.

Fabozzi and Francis (1978) and Bos and Newbold (1984) were the first who suggested that a beta can change over time within a CAPM model and proved that a beta representing systematic risk indicator is unstable. These results laid the groundwork for further research papers in the field. Therefore, Sunder (1980) confirmed beta non-stationarity for the US market, Bos and Fetherston (1992) for the Korean market, Kim (1993) for the Hongkongese market, Bos, Fetherston, Martikainen and Perttunen (1995) for the Finnish market, Kok (1992) for the Malaysian market, Wells (1994) for the Sweden market, Faff, Lee and Fry (1992) for the Australian market, as well as Shah and Moonis (2003) for the Indian market.

Subsequently, this field has experienced considerable development alongside the improvement in econometric and mathematical tools. Nowadays, there are several approaches to estimating dynamic beta based on certain econometric methods. These include Bayesian (Jostova and Philipov 2005), SV (Johansson 2009), Markov regime-switching (Mergner and Bulla 2008) and other less popular econometric models. Be that as it may, in this article we shall apply three modern techniques for time-varying beta estimation and forecast, which will be discussed later.

The employed models are rolling OLS, three types of multivariate GARCH models, semiparametric regressions and the Kalman filter. While the rolling OLS and Kalman filter methods are commonly used beta estimation techniques, multivariate GARCH models and semiparametric regressions are rarely applied in the literature, although in some cases they are capable of providing better estimates. Among GARCH models, DCC-GARCH, DCC-GJR-GARCH (including asymmetry in conditional volatility) and ADCC-GJR-GARCH (including asymmetry in conditional volatility and correlation) with both normal and Student's distribution assumptions, are employed. Among semiparametric regressions, those with normal, Epanechnikov and uniform kernel types are applied for beta estimation.

The sample includes data on 29 Russian companies, six sectoral indices and the MICEX index as a market portfolio. Based on the data, all of the models are compared for in-sample and out-sample performance.

Then estimated betas are investigated for stationarity by Augmented Dickey-Fuller, Philips-Perron and Kwiatkowski–Phillips–Schmidt–Shin tests. Four proposed hypotheses are tested in this paper.

Typical research has never been carried out for Russian companies before, and in general it is seldom found in the literature. Thus, testing Russian betas for stationarity is innovative for the research field. Another novelty of the paper is methodological and involves use of DCC-GJR-GARCH and ADCC-GJR-GARCH models, which have never been employed in analogous works earlier, while they are modern and powerful econometric tools for estimation and forecasting. Moreover, in typical papers, semiparametric models are also rarely compared with the Kalman filter and much less with GARCH models.

The paper is structured as follows: the following section will offer a brief review of the literature on beta estimations, while Section 3 will lay out hypotheses and Section 4 will describe the sample used. Section 5 will explore the models and criteria employed for their comparison. Section 6 will set out the results of the research, while Section 7 draws conclusions.

Conclusions

In this paper, 29 Russian stocks and six sector indices during the period from 2010 to 2013 were investigated for beta time-variation. Employing various econometric methods, it was concluded that the Kalman filter and semiparametric regressions showed the best performance for the analyzed period. However, for the forecast period multivariate GARCH models demonstrated greater efficiency (in 24 of 35 cases), which is a surprising result for typical research. According to the results, most of the beta dynamic processes are proven to be non-stationary under the Augmented Dickey-Fuller (29 out of 35), Philips-Perron (27 out of 35) and KPSS (34 out of 35) tests.

It is believed that the results of this study make a contribution to broadening scholarly understanding of Russian stock beta behavior. Beta estimates make it possible to correctly rank Russian stocks depending on the systematic risk and their possible change (expressed by a standard beta deviation).

The present research could be helpful when attempting to determine beta under popular DCF, LBO and other valuation models. Nowadays most equity research analysts working on emerging markets use Hamada formulae for company beta calculation rather than use regression to estimate beta directly. The reasons of such preference are the regression results inconsistent with corporate finance theory, poor market efficiency, high volatility and great exposure to external shocks. In these cases, dynamic models, which takes into account heteroscedasticity and allows to estimate time-varying alpha as well, are to be employed. Their usage lead to more accurate beta estimates than those available under the standard approach involving the use of regressive analytical models.

The proposed methodology could also be a valuable tool for risk managers, traders and portfolio managers. On the basis of out-sample beta and alpha forecasts beta-neutral portfolio can be constructed (portable alpha strategy), market sensitivity of which is close to zero, while alpha is maximized. For this kind of portfolio even small beta changes is significant for risk-return characteristics, therefore, dynamic models should be applied for its regular calibration and market-neutral position keeping. Employed in the study methods can possibly be used for active hedging strategies, as beta stands for optimal hedging ratio for portfolio comprised of an asset and market index. In case of beta non-stationarity importance of time-varying beta estimation techniques increases even greater, as OLS method assumes its constancy. According to the literature, beta non-stationarity is more frequently observed for emerging markets. Thus, emerging markets participants should consider it in their work.

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Infrastructure-Driven Development Policies: An Empirical Impact Analysis

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Abstract:

One of the paradigms of the Infrastructure-driven development concept is the idea that public policies shall direct consistent resources towards infrastructures to stimulate growth in economically lagging regions. Nonetheless, despite the general macro implications for growth demonstrated by several studies, the impact of infrastructure on local growth need further evidence and specific methodology for micro-level analysis. This paper focuses on the financing and development of the so-called social, economic and territory infrastructures. Financing and incentives for infrastructure development require specific policies; among such policies there is the negotiated planning. Based on an empirical analysis, the paper evaluates their effectiveness. Projects are analyzed in terms of structures taxonomy and how they are intended to meet identified problems. Factors associated with success in terms of economic development are discussed. Results suggests that the scope and purpose of projects as well as the level of agreement between stakeholders drive positive outcomes.

Key words: political economy, local policies, economic development, infrastructure financing.

JEL Classification: O10, O47, H54.

Introduction

Government at different levels try to address the persistent problems of depressed and weak areas by supporting locally-based policies along with infrastructure investments. Since the evaluation of policies is a key ingredient of today's public decision-making process, the identification of successful drivers is a thought-provoking topic. Yet, both the ex-ante appraisal and the ex-post evaluation is challenging because of the complexity related to the multiplicity entities called upon to interact in order to converge on agreed plan for socio-economic development. Though, there is wider recognition that successful projects should be sustainable with clearly defined long-term objectives so that the expectations of stakeholders persist constant (Agrawal 2001). Also, long-term success depends on adopting and then being able to manage different strategies simultaneously (Di Foggia 2016a) regardless the different objectives levels e.g. general, specific and operational. The negotiated programming for local development (NPLD) is a form of agreed regulation between public authorities at various levels and stakeholders – e.g. local authorities, employers, community, trade unions, co-operatives, development agencies – interested in the implementation of pre-defined projects. The backbone of NP is infrastructure development, specifically infrastructure assets, systems and networks that provide essential services for local development. In the past decade, much has been said about both their efficiency and effectiveness. One of the aspects for which the discussion has been pretty long is the lack of empirical evidence. It is inevitable that a different efficiency in the returns from projects may occur due to different geographical and resource endowments. Infrastructure has therefore become a ubiquitous theme in the policy debate (Zhang, Wu, Skitmore, and Jiang 2015).

This work contributes to the existing literature offering some considerations that come from an empirical analysis. Yet, it is important to note two aspects. The first is that in the majority of cases, we know little about the efficiency of these measures since as just mentioned the concerned empirical analysis are deficient. The second aspect is relative to the fact that, even if the objectives are many, the principle one is the reduction of differential territorial development (objective of cohesion). This paper support policy makers and decisions in the light of a sound analysis supported by reliable data. Specifically, the paper contributes to design better policies by facilitating better-informed decision making. Another objective is the improvement of the quality of policy proposals. The analysis of political acceptability is not considered even if the results provide sufficient evidence to respond to concerns that are likely to arise in the decision-making process. These ideas are developed presenting mainly the results of the quantitative analysis based on data and accompanied evaluation of those involved for various reasons in the projects. In the first part of the document we refer to the literature on this subject trying to evaluate the common aspects, after that the instruments, their origin, the legislative framework, and the objectives. In the next section, before a concise discussion we define the methodology of the research. After that the presentation of the results comes. Conclusions and policy implications follow.

Concluding remarks

Policy makers face the persistent problems of depressed and weak areas supporting local policies and infrastructure investments. The Infrastructure-driven development approach suggests that public policies shall direct consistent resources towards infrastructures to stimulate growth in economically lagging regions. Since both quantity and quality of infrastructures positively impact on local growth, it is difficult to identify which infrastructure subsector matters the most in different circumstance. Regardless the subsector, investments in infrastructures have often been financed with public funds. The public sector has been the main actor in this field, given the inherent public good nature of infrastructure and the positive externalities. Development policies seek to mitigate such problems support local economies. There is no one definition of success since it depends on the objectives and on definitions of success which may vary amongst the stakeholders of the same project.

This paper focused on a specific development policy aimed at equipping territories with infrastructures and bringing greater local participation in the decision-making. These instruments base on local social and economic infrastructures that in turn support the local economic development. No wonder that the evaluation of these policies is challenging. This is mainly due to the level of complexity related to the multiplicity of public and private entities called upon to interact in order to converge on an organic and structured plan of a territory socio-economic development. Besides being sustainable for the long-term, successful projects shall ensure the cooperation convergence of views of the local authorities and community as well as the potential stakeholders. In addition to the economic benefits these projects provide, the related investments also bring social welfare, such as improved connections and services provided the following fundamental characteristics. Social and productive forces must converge on a clearly defined territory development plan.

Also, the presence of entrepreneurship that makes feasible the plan agreed by intervening with its own financial resources is recommended. Equally important is the presence of multiple projects that reinforce each other allowing the integrated development of the territory. In fact, modern society is reliant on the stability and performance of infrastructure networks for almost every social and economic interaction. As per the scope and the amplitude of the projects, it is important that the projects could be executed in the short term and be proportional to the requirements. In addition, the local consultation is a key tool to converge uniformly on the development goals identified in the conciliation process. Indeed, the consultation phase characterizes this tool as a bottom-up approach. No wonder that good local infrastructure can implement the competitiveness and the attractiveness of territories, improve the standard of living strengthening local identities and support territories' networks with tangible and intangible assets related to accessibility and knowledge.

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Crowdfunding as a Perspective Instrument of Financing Small and Middle-Sized Businesses in the Russian Federation

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Abstract:

The article substantiates the relevance of developing alternative funding ways for project activity of small and middle-sized businesses in the Russian Federation. Therefore, this research aims at working out proposals for forming a common outline and individual infrastructure elements of a crowdfunding system to activate project and investment activity of such businesses in the Russian Federation. Desk and sociological research was applied to achieve the research objectives. Desk research was done, using the available statistical and analytical information, Russian laws and regulations, and secondary sources. Data regarding current state of the small and middle-sized business sector were collected, and lists of potential respondents were compiled, and latest contacts of such respondents were collected within the desk research. Sociological research included questionnaire surveying, using e-forms to submit data and sending requests via e-mail. Sample included 31 small and middle-sized Russian businesses. The article presents findings obtained within research and development done out of public funds according to the 2016 Governmental Assignment of the Financial University in Creating a system of public investment (crowdfunding) to activate small and middle-sized businesses. Research materials present basic concept of mainstreaming project and investment activity of small and middle-sized Russian businesses.

Keywords: crowdfunding, equity-based crowdfunding, blockchain, financial technologies, P2P lending, fundraising, innovations, venture investment.

JEL Classification: G11, G24, O31.

Introduction

A theory of crowdsourcing and crowdfunding appeared in mid 2000's to summarize the first results. The history of crowdsourcing concept is closely associated with Jeff Howe, who published his article *The Rise of Crowdsourcing* in June 2006 and used the idea of crowdsourcing for the first time in the world. He describes the phenomenon of people uniting to solve a certain problem with such union not including any award or including a small award, and the effects of such unions on companies that solve similar tasks professionally.

Further on, the theory of crowdsourcing and crowdfunding was picked up by followers of the managerial and economic approaches. Daren C. Brabham developed a technique of application of crowdsourcing as a tool to solve communication problems and he reasons application of crowdsourcing practices in developing and making managerial decisions in his publications (Howe 2012). Crowd-technologies are defined as a tool to solve managerial tasks, a mechanism to regulate life of an organization within this approach; however, application of crowdtechnologies is reduced in reality to a tool of discovering ideas for appropriate managerial decisions to rely on. A close relation of crowd-technologies, primarily of crowdsourcing and crowdfunding, to development of information technologies and social changes was recognized within our research, in particular to better understand the nature of crowd-technologies. One should mention studies done by the following authors to this context:

- the theory of symbolic interactionism (Mead G. H), as a model of crowd interaction and motivation (Blumer 1984);
- the theory of information society (Bell, D., Toffler, E., Castells, M.) (Melnik2005).

Globalization and accelerated rates of scientific and technological expansion lead to increased relevance of the ideology of joint project implementation, which was applied in practice in a great variety of forms with

crowdsourcing, crowdfunding and crowdfunding being most popular. Despite differences between the said varieties of crowd-technologies, one can also point out common characteristics that determined their popularity:

- broad coverage. Access to results achieved by large groups of people is available online;
- a wide array of choices and alternatives. Crowdsourcing allows us to see the existing problems from different points of view thanks to involvement of large sections of the public possessing varying personal and professional knowledge;
- unprecedented speed. Usually, crowdsourcing projects are characterized by fixed deadlines, which allows for prompt solving the problems stated, when combined with decentralization of multiple participants;
- efficiency, arising as result of mass involvement of the public and use of cheap remote labor;
- user involvement.

Currently, crowdsourcing is applied effectively to fulfill a great number of tasks, including: solving R&D problems; testing software; recruiting; attracting funds; developing products, design etc.; troubleshooting for organizational problems of a business; forecasting; marketing research.

We believe Wikipedia, a successful developing project with its contents being created and moderated predominantly by volunteers and it also being funded by a great number of small donations, is the most popular and, obviously, successful project.

Crowdsourcing has rapidly gained popularity in Russia (Figure 1), which is associated with its relevance to the Russian realia and relatable to traditional values like communality and team spirit. Low efficiency of the bureaucracy against high level of governmental influence over economy and society and purely developed private sector, including small businesses, on the one hand, and public associations created a number of niches for crowdsourcing projects.

Along with clones of successful foreign projects, a lot of in-house projects arose in Russia that are highly competitive with the foreign examples in their innovation and performance. *RosYama* is a vivid example, when users monitor conditions of roads together and interact directly with the government. There are also interesting social projects available that target the disabled, e.g. *No barriers*, or *Subway for everyone*. In most cases, users of such resources do not even think about them being involved in crowdsourcing, they just share their knowledge, information and opinions with others.

Conclusion

The situation at the Russian crowdfunding market is mostly determined by the young age of such financial instrument. Most Russian crowd-projects are overall associated with fulfillment of social initiatives or non-commercial histories and are extremely rarely associated with creation of innovations or real goods.

However, they may generate a substantial pulse from the economic point of view. We are talking primarily about development of applied and consumer-oriented innovations with the help of such projects. Every person may be a consumer and at the same time the author and design team member of such project in this industry (Ovseichik *et al.* 2015). To the most part, these are FMCGs that solve our real everyday problems and affect the quality of life for each of us. This is an enormous market. Even now, non-food retail turnover exceeds RUB1 tln. However, the bulk of consumer goods (e.g. kitchen and household goods) that are presented at the Russian market are still developed and produced in China or Europe. The existing internal demand of such goods is a giant source of development itself. This is the very market for product of our innovators and inventors (Ilienkov *et al.* 2012).

We believe that crowdfinancing has a future in the Russian economy, as long as it can undergo perspective development due to a great number of factors:

- the technological industry is obsolete and is not capable of satisfying the demand of innovations because of obsolete logistics of financial relations;
- innovations have moved from the plane of technologies into the plane of politics and can be one of socially important lifts;
- the modern innovation system does not meet the reshaped demand anymore and is now a bottle neck, instead of innovation development stimulator;
- such challenges as shortage of resources, poor environmental conditions, climate change and medicine have grown to be global and cannot be resolved by a single government;
- global finances and collective financing technologies reduce the input threshold and educational standard abruptly for professional investors and amateurs with the idea of financial support of the innovation;
- traditional financial institutions are ready to use this model to benefit from the boost of the financing institution;
- maintaining competitive power of regional economies.

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This article presents findings of the research founded out of public funds according to the 2016 Governmental Assignment of the Financial University in *Creating a system of public investment (crowdfinancing) to activate small and middle-sized businesses*.

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Methodological Approaches to Assessment for the Economic Effects of the State's Participation in Integration Processes

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Abstract:

The scientific article actualizes the problem of assessment of the economic effects of the countries' participation in integration processes; the purpose of the study is to develop methodological approaches to assessment and forecast of the economic effects (positive and negative) received by the Russian Federation from participation in the global integration processes. The methodology of the study is based on the use of methods of logical, structural, comparative, economic and statistical analysis. The scientific, analytical and reference materials of the Russian and foreign authors, as well as official statistical data of Russia, Belarus, Kazakhstan, foreign countries and international organizations were used in preparation of the paper. The most important scientific results include the development of methodological approaches to assessment of the economic effects received by the Russian Federation from participation in the global integration processes. The scientific novelty includes systematization of various options of application of the index approach for assessment of the effects of the regional economic integration; disclosure of the peculiarities of the technique of assessment of the impact of elimination of the financial and administrative barriers to the movement of goods between the Customs Union member states; description of the procedure of application of the technique of the effect analysis based on allocation of sensitive product groups; application of the technique of assessment of the effects of Russia's participation in the integration processes on the basis of descriptive approach.

Keywords: integration, effects, techniques, integration processes, participation, trade.

JEL Classification: F02, F15.

Introduction

The last two decades are described by an increased interest in the problems of international trade and economic integration (Johnson and Noguera 2011) and, in particular, of the formation of preferential trade agreements (PTAs). Regional trade integration has become one of the drivers of the development of international trade. Participation of countries in global and regional integration processes has some influence on its economic performance, and therefore the task of quantitative and qualitative assessment of such effects becomes particularly urgent.

In recent years, Russia has been an active participant in the integration processes, in particular, in the framework of creation of the Customs Union of Russia, Belarus and Kazakhstan. In addition, in 2012, Russia joined the World Trade Organization (WTO), undertaking international obligations in the field of trade and investment regulation. These developments undoubtedly carry certain effects, both positive and negative, for the Russian economy (Strategic Global Forecast 2030, 2011).

In the meantime, despite the importance of quantitative and qualitative assessment of the impact of Russia's participation in integration processes on its economic performance, there is a lack of fundamental papers on the topic at the moment (Turuntseva 2011). This is partly due to the fact that it has been a relatively short period of time since the creation of the Customs Union and Russia's accession to the WTO, which significantly complicates the application of a range of analytical tools and models (Volochkova and Turdyeva 2011).

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Conclusion

As a result of the study, methodical approaches were summarized that allow to assess the impact of Russia's participation in global integration processes on the economic performance of the country in the most complete and comprehensive way.

These approaches include: technique of assessment of integration effects on the basis of the index approach; technique of analysis of the effect of participation in integration processes based on definition of sensitive product groups; technique of assessment of the impact of elimination of financial and administrative barriers to the movement of goods between the CU member states; technique of assessment from the point of view of global value chains; technique of assessment of integration effects using econometric methods; technique of assessment of the effects of Russia's participation in the integration processes on the basis of a descriptive approach.

In this study, we were unable to determine the most effective tools for analysis, and further testing of the provided methodological approaches to the assessment of the economic effects of the country's participation in integration processes is required.

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Performance Comparison Between Real Estate Securities and Real Estate Investment Using Stochastic Dominance and Mean-Variance Analysis

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Abstract:

Unlike in the past, different choices for real estate investment are now available for investors. Real estate securities were introduced as another alternative investment vehicle for real estate investors. To promote efficient investment in real estate and real estate securities, this paper explores the relative performance of different types of real estate investment including land, town home, single house, and real estate securities in Thailand from April 2008 to May 2016 by applying mean-variance and stochastic dominance techniques. The results of this examination suggest that the real estate market is not efficient and asset allocation plays important role in real estate investment performance. Mean-variance and stochastic dominance analysis report the same result that town home investment dominates single house investment and land investment dominates condominium investment. Beside trying to choose the best real estate or real estate security in their portfolio, investors should put extra effort in finding the proper types of real estate for their portfolio.

Keywords: performance, investment, real estate, real estate securities, mean-variance analysis, stochastic dominance.

JEL Classification: G11, G14, O53.

Introduction

The real estate asset class is one of the common asset classes in many investors' portfolios for many reasons. For example, real estate is considered a low risk asset. It has value even when the economy is extremely poor. The imperfect correlation of its return and other assets' return helps in lowering a portfolio's diversifiable risk. It is in the long-term and safe investment class which is appropriate for people in aging society. Recently, real estate securities were introduced to let low-wealth investors be able to invest their money in real estate. However, the increase in real estate investment's choices brings about more difficulty for investors in making proper investment decision. Besides, the knowledge about the investment in real estate and real estate securities is quite limited since there are not many researches in this area.

This paper applies the mean-variance and stochastic dominance techniques to compare the performance of the different types of real estate and real estate securities to promote more understanding on real estate investment. The findings should help investors to gain more understanding on real estate and real estate securities investment and provide academic researchers additional evidence about the existence of market efficiency in real estate investment and comparative natures of the performance of different types of real estate investment. The study focuses on the relative performance of different types of real estate investment in Thailand because of its lucrative real estate and real estate securities investment's opportunity which comes from the introduction of ASEAN Economic Community (AEC) in 2015.

Conclusion

The problem of real estate investment on the lack of investment tools is less significant since there are many types of real estate investment available for investors in many markets. This study analyses the relative performance of different types of real estate and real estate securities investment by using mean-variance and stochastic dominance techniques to provide more information to investors to use in improving their portfolio.

The examination by mean-variance analysis apparently points that town home investment dominates single house investment and land investment dominates condominium investment. When stochastic dominance analysis is applied, the study finds that there is no type of real estate investment first-order stochastically dominates other types of real estate investment. However, at the second-order stochastic dominance analysis, the results appear the same as mean-variance analysis. In addition, when the further analysis on stochastic dominance is applied, the investigation shows that, for traditional real estate, single house investment and town home investment third-order stochastically dominates condominium investment. All of traditional real estate investment third-order stochastically dominates real estate securities investment.

In theory, the existence of the dominated types of real estate investment is the evidence which is against the idea of market efficiency. In practice, the results imply that investors should pay attention not only on the selection of the specific real estate or real estate security but also on the choosing of the types of real estate investment to avoid having the inferior sub-asset class in their portfolio.

Nonetheless, there are at least two obvious limitations on this study. First, the period of study might be too short. The seasonality impact might not be completely counted into the findings. Second, the scope of the data is limited to only Thailand market. Hence, the further study should be done to overcome these limitations and to provide more complete results.

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Managing Regional Consumer Market Based on the Improved Approach to Evaluating Customer Needs for Food Commodities

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Abstract:

Regional consumer market can be regarded as an economical category occupying an important position in the social reproduction system and reflecting the conditions of the regional economy. Being the final stage of the regional reproduction process, consumption is a predetermining factor of improving the economic system efficiency. In this regard, developing the system of customer preference evaluations is one of the ways for supplying the population demand in the region and, simultaneously, for increasing the return levels of local commodity producers. The customer needs analysis allows the companies to develop the strategy that is adequate to the market conditions and thus to affect the improvement of the investment climate in the region. This stipulates the necessity to develop better mechanism for identifying the unsatisfied needs and for formulating, based on this mechanism, an action plan that would ensure the solution to this problem.

The objective of this study is to improve the widely-accepted marketing approach to studying the consumer needs for food commodities for the purposes of optimization of the regional consumer market management. The undertaken marketing research identifies the factors that predetermine the effective demand for food commodities and the degree of consumer satisfaction with the existing consumption level.

Keywords: regional consumer market, needs, food commodities, analysis, evaluation.

JEL Classification: P42, P46, R58, M31, L66.

Introduction

Within the framework of the earlier investigations dedicated to studying the investment climate in the region it has been established that the consumer potential represents the most significant indicator for evaluating the readiness of the regional economy for attracting and implementing the investments (Golaydo and Soboleva 2015, Soboleva, Golaydo and Lygina 2015, Soboleva and Parshutina 2016). Based on developing the marketing approach to managing the regional food market, the authors of this study suggested the process algorithm for regulating the demand (Soboleva and Parshutina 2015), (Soboleva, Lygina and Rudakova 2015). This model is founded on the consumer needs. Insofar, as the food commodities possess the largest specific weight within the whole amount of the products consumed by the population, the values of the needs for them should be among the basic indicators for developing the food-manufacturing industry and retail sector. In this regard, development and practical implementation of the approach to the profound analysis of consumer needs for food commodities will make it possible for the producers to maximize their profits through the complete satisfaction of the needs of the population. In modern environment customer affairs become ever more significant for each participant of the market relations (Stroeva, Shinkareva, Lyapina and Petruchina 2015). The abovementioned facts highlight the actual importance of the problem of identifying and studying the consumer needs for food products.

Conclusion

The problem of identifying the needs of the population is not new. Many studies have already been dedicated to the issue. However, identifying and forming the customer needs at the regional food market represent special case of these issues; therefore, their scientific studies have not been sufficiently extensive. In the course of this study, for the purposes of improving the regional consumer market management, the authors have developed recommendations for further more profound investigations of consumer preferences; particularly, the model of forming the needs on the food market has been developed. Based on the accomplished marketing research study, the factors have been identified that predetermine the effective demand for food products and the degree of customer satisfaction with the existing level of consumption. To eliminate the abovementioned disadvantages that occur in the process of carrying out the survey on customer preferences, the authors of this study suggest that it should be supplemented with the evaluation of the preference system. The most important aspect of food product consumption is represented by product quality. For the purposes of taking into account the quantitative and qualitative parameters of food consumption, including the subjective descriptions of quality by customers, the authors suggest that the method of calculating total integrated factor of diet quality should be applied that should account for the relative level of satisfying the needs for food of the population apart from the quantitative and qualitative characteristics.

Complex application of the marketing and the statistical approaches to identifying and to evaluating the suggested indicators, and, on this basis, of applying the analytical approach to generalizing the results will make it possible to improve the efficiency of the regional consumer market management and to adjust the supply of goods taking into account the customer requirements on regular basis. To optimize the procedure of the marketing research on the needs, a mechanism was suggested for evaluating the preference patterns. For the purposes of improving the regional consumer food market management, it was recommended that the integrated diet quality indicator should be calculated. This would make it possible to take into account quantitative and qualitative parameters of food consumption together with the relative level of satisfying the consumer needs.

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Spatial Analysis of Income Poverty and Social Exclusion in European Union - 28 in 2014

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Abstract:

The aim of the article is to compare the conditions of income poverty and social exclusion in the European Union - 28 member countries in 2014 in terms of 3 dimensions: income poverty and income inequality, material deprivation and labour-market exclusion. Each dimension is mapped by means of several indicators, majority of which is used for monitoring progress of Europe 2020 strategy in the area of poverty and social exclusion. Due to correlations among the indicators, we used factor analysis to create mutually independent factors determined by several source indicators. The factors characterize the particular dimensions, and serve as a basis for a cluster analysis used in the article, in order to gain relatively homogeneous clusters of European Union - 28 countries in terms of income poverty and social exclusion, while countries of various clusters would significantly differ in one or more dimensions.

Regarding the observed dimensions, the resulting findings provide a rather comprehensive view of the conditions of poverty and social exclusion in the European Union. The paper puts emphasis on the visualisation of results obtained by statistical methods, therefore, the analyses were carried out by means of SAS JMP.

Keywords: income poverty, social exclusion, material deprivation, low work intensity, unemployment, cluster analysis.

JEL Classification: I32, C38, E24.

Introduction

Poverty and social exclusion have become serious social problems concerning even the most advanced European countries. The European Union (EU) is well aware of that fact. Hence, among the main priorities of the Europe 2020 strategy, a target was laid out to reduce the number of persons in the EU who are threatened by poverty or social exclusion by 20 million. According to Mareš and Rabušic (Mareš and Rabušic 1996) a sole, correct scientific definition of poverty does not exist and therefore a universally valid method of its measurement cannot exist either. Only certain concepts of poverty are measurable. We agree with the opinion of the authors Betti et al. (Betti et al. 2015) that to be able to evaluate the condition of poverty, deprivation and social exclusion a multidimensional approach to those phenomena is necessary. This article is based on a 3-dimensional concept of poverty and social exclusion used by Eurostat to monitor progress of EU in achieving the abovementioned key target of the Europe 2020 strategy. The concept reflects 3 dimensions: income poverty, material deprivation and low work intensity. Eurostat uses an aggregate indicator *at risk of poverty or social exclusion* (AROPE) combining three rates: at-risk-of-poverty rate, severe material deprivation rate and low-work-intensity rate.

Poverty, material deprivation and labour market exclusion are serious problems to which the EU will have to pay much closer attention since, according to the European Commission, meeting the Europe 2020 strategy goals in the area of poverty and social exclusion seems improbable (European commission 2016). Between years 2009 and 2012, the rate of population at risk of poverty and social exclusion kept growing (Frazer et al. 2014), and only in 2012 there began a slow decrease in the total of people whose income was either below the at-risk-of-poverty threshold or were materially deprived or lived in households with low work intensity¹. In 2014 more than 112 million people representing 24.4% of the total population of the EU-28 countries lived at risk of poverty or social exclusion (Eurostat 2015). In other words, nearly ¼ of the EU-28 population disposed of an equivalised income below the at-risk-of-poverty threshold and/or could not afford at least 4 out of 9 monitored material deprivation items and/or lived in households with low work intensity - less than 20%. The largest part of that population suffered from income poverty (17.2%). 11% of the EU-28 population lived in low work intensity

¹ <http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy/headline-indicators-scoreboard> (accessed August 25, 2016)

households and 9% of the EU-28 population experienced severe material deprivation. According to Eurostat (European commission 2015) the at-risk-of-poverty-or-social-exclusion (AROPE) rate increased in 2014 compared to 2008 by 0.6 p.p., meaning that in 2014 there were more people at risk of poverty and social exclusion than in 2008 by 2.4 million.

The aim of the article is to map income poverty and social exclusion in EU-28 countries and present a spatial comparison of those phenomena based on the most recent available data from EU-SILC survey and selected statistics provided by Eurostat. Because of the complexity of the data, we chose the year 2014 as the reference period. Due to relatively strong correlations among the dimensions of poverty and social exclusion mentioned in the introduction, we used a correlation and factor analysis in the 3rd part of the paper to prepare a database for cluster analysis. The 4th section of the article provides an interpretation of results obtained both through the cluster analysis by factors designed in the 3rd part of the article, and in terms of the original source indicators. The 5th part deals with the impact of particular dimensions on overall poverty and social exclusion in EU-28 countries and country clusters. The final, analytical part of the article (6th section) compares the income poverty and social exclusion in EU-28 countries based on an integral indicator determined by the factors obtained in the factor analysis. Eventually, the results of our analyses are compared with the ranking list of countries in Social Progress Index.

Conclusion

The paper evaluates and compares poverty and social exclusion in EU-28 member countries based on statistical analyses of selected indicators in 2014. Multidimensional statistic methods were used for that purpose, such as correlation analysis, factor analysis, cluster analysis, analysis of poverty and social exclusion determination by various dimensions, and a comparison of total poverty and social exclusion and its dimensions by means of factors and an integral factor derived from them. Each method provides a different view of the researched topic, it confirms and above all complements the results obtained by other methods. The factor analysis identified 3 factors in the original set of indicators of poverty and social exclusion representing 3 dimensions: 1 income poverty and income inequality, 2 material deprivation, 3 labour market exclusion. The correlation analysis confirmed the strong dependence among indicators included in each dimension. In that section of the article a concise synthesis of results was presented.

In terms of poverty and social exclusion, the cluster of the following countries exhibited the best results in 2014: Austria, the United Kingdom, France, Slovenia, Denmark, the Netherlands, Finland, Belgium, and Malta. Poverty and social exclusion was in those countries determined quite evenly by all three dimensions. The integral indicator of poverty and social exclusion confirmed the above average positive social performance in those countries of EU-28 with a note that Malta registered an above average risk of material deprivation and Belgium an above average risk of labour market exclusion.

The situation in Luxembourg and Sweden was in 2014 according to the integral indicator even better than in the countries of the previously mentioned cluster and comparable to Germany. Though, a slightly above the EU-28 average risk of income poverty and income inequality was registered in those three countries. Nevertheless, we need to realise that in terms of income poverty only relative concepts are used, therefore, the poverty risk threshold is set differently in various countries. While in Luxembourg the at-risk-of-poverty threshold for a one-member- household in 2014 was set at 20,000 euro and in Western and Northern Europe at 12,000 to 17,000 euro, in the postsocialist countries it was under 5,000 euro (except Slovenia – 7,146 euro) and in Romania only 1,317 euro. The reason for including Luxembourg, Sweden and Germany into the same cluster with Poland and Estonia showing average values of the integral indicator and with Lithuania and Latvia where the integral indicator was below the EU-28 average, was the above average income poverty and income inequality in those three countries.

While countries of Western Europe and Scandinavia registered a relatively low level of poverty and social exclusion risk, the postsocialist countries (except the Czech Republic and Slovenia) together with the countries of Southern Europe recorded above average risk of poverty and social exclusion in at least one dimension of that phenomenon. As mentioned earlier, the Baltic States registered a high degree of income poverty and income inequality, though, combined with a relatively low unemployment and labour market exclusion. The highest risk of poverty and social exclusion among the Baltic States was quantified in Latvia recording in 2014 a high level of material deprivation as well.

Based on the integral indicator, the overall risk of poverty and social exclusion was in 2014 the highest in Greece, Bulgaria, Spain, Romania and Croatia. Greece showed an increased risk in all three dimensions and the absolutely highest degree of labour market exclusion of all EU-28 member countries.

Though Bulgaria registered below average degree of labour market exclusion, the relatively good result in one dimension could not compensate for negative values in the other two. Bulgaria had to face extremely high levels of material deprivation, the most serious in the whole EU-28.

Spain did not have problems with material deprivation in 2014 but similarly to Greece, it recorded a high degree of unemployment and labour market exclusion. The risk of poverty and social exclusion was in 2014 so similar in Greece and Spain that the two countries created a separate cluster.

Romania had to face in 2014 the highest risk of income poverty and income inequality even though it had the lowest poverty threshold among all EU-28 countries. It is remarkable that Romania recorded in 2014 the lowest risk of labour market exclusion, so that only 15% of poverty and social exclusion was determined by that dimension while income poverty and income inequality had a three times stronger impact on the overall poverty and social exclusion in that country. Romania registered the least typical representation of the dimensions and their shares in the formation of poverty and social exclusion which was reflected in the cluster analysis where Romania was presented as a separate cluster.

Croatia completes the quintuple of EU-28 countries with the highest risk of poverty and social exclusion. Croatia and Greece were the only two countries where the risk of poverty and social exclusion was above

average in all three dimensions. But Croatia recorded significantly better results than Greece in all three dimensions. Labour market exclusion was the most detrimental dimension for Croatia, reaching the 4th worst level among the EU-28 countries.

Several EU-28 countries that according to the integral indicator did not face as high levels of poverty and social exclusion as Croatia, still recorded significantly higher risks in some other dimensions than Croatia. It was Ireland and Hungary besides the already mentioned Estonia which recorded the 2nd highest degree of income poverty and income inequality risk after Romania. Ireland, as a consequence of high degree of low job intensity registered the 3rd highest level of labour market exclusion (after Greece and Spain). In Hungary, the 2nd highest level of material deprivation was listed (after Bulgaria). In both cases (Hungary and Ireland) the negative results in the mentioned dimensions were compensated for by a low risk of income poverty and income inequality, the lowest among the EU-28 countries.

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Archaic Forms of Economic Activity in Peripheral Regions and Problems of Systematic Structural Reforms of the Russian Economy

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Abstract:

The article analyzes the role and scope of the rooted economy of peripheral regions, which constitute the significant portion of archaic, traditional economic practices of the population, resources and informal institutions governing them.

The study of traditional economic practices is carried out within the framework of the concepts of peripheral economy, rooted economy and ethno-economy. The given statistic empirical evidence demonstrates the basic role of traditional economic practices of the population in the reproduction of resources of the rooted economy sector of the region. The hypothesis about the high level of commercialization of economic structures of ethno-economics is justified and confirmed by the sample of the economic-sociological research. It is shown that an integral part of the concept of structural reforms of the Russian economy should be the strategy of capitalization of economic resources of the archaic peripheral regions.

Keywords: archaic economy, rooted economy, traditional economic practices, economic structure, peripheral economy.

JEL Classification: A1, R12.

Introduction

The modern theory of economics basically operates categories of market economy, in the optics of which it becomes more and more problematic to provide the description and interpretation of a number of objects, structures, processes and relations of economic reality.

In today's world, especially in the countries that have returned to the market economy recently, entirely take place processes that reanimate the archaic economic structure – traditional economic practices, historically developed in specific natural-landscape and the economic-geographical conditions of living of the nations and ethnic groups.

Consideration of the market economy mechanisms as a self-sufficient, not needing taking in account the economic features of non-market and quasi-market forms of economic activity in theory and practice of economic reforms in Russia (where the extensive economic periphery with a large proportion of archaic economic practices of the population and traditional social institutions takes place) slows the economic growth and increases the risks of modernization of the Russian economy, especially makes complex the choice of an adequate model of structural reforms in the economy.

In this regard, it raises the necessity to update the problems of identification and evaluation of the potential of archaic, traditional economic practices in Russia, especially the problems connected with the search of strategies and mechanisms for their inclusion in the processes of modernization, the determination of the place of this segment in the models of structural reform of the Russian economy. So, archaic economic structures on an example of a typical peripheral regions of Southern Russia were considered in this study namely as an integral part of a mixed economy of Russia, which must become an operational strategic target in structural reform policy.

Conclusion

Otherwise, the study confirmed the proposition that economic archaic (ethnoeconomy) is the systemic (not an afterthought. alien) element of the economy of Russian multiform peripheral regions and fulfills the key role in the reproduction process.

Small-commodity nature, social institutions regulating economic activities and archaic technological structure of this economy segment reflect not only its historical limitations and objective natural-economic conditions (scarcity of resources, isolation, fragmentation, lack of communication, harsh climatic conditions, landscape, etc.) to which the local population have to adapt to, creating a form of economic and social institutions, meeting these requirements. The evolution of forms of organization of production through the creation of large corporate structures is quite limited.

Economic practices of the population, as a rule, reflect the ethnic feature, have multi-specialized production and are regulated mainly by informal institutions, based on the authority and resources of the family, clan, type, neighborhood community, social communities, ethnic kinship and others.

The family labor, inherent economy, households ("court"), private farms, peasant farmers' economy play the role of the main economic entity in this segment of the economy. As an object of strategic management of economic archaic (ethnoeconomy), firstly, appears as a certain integrity of resources, forms of economic activity regulation of social institutions and infrastructure.

Identification (operationalization) in the practice of public management of this economic sector is insufficient, incomplete, and reduces the level of control of the system in this area only as a "small business" (which is reflected in the practice of creation of "programs" for State support of small business in all regions). So, the entire sector of ethnoeconomy should become the object of control and strategy development based on a variety of forms and resources of family-labor farms that form the base of rooted sector of economy in the region. Secondly, the economic archaic is only partially regulated by market institutions and mechanisms. The main part of it is under the control of non-market and quasi-market regulation factors, that require a substantial expansion of indirect forms of state support to the population and economic activities in peripheral regions, especially the institutional (legal regulation of economic transactions in the interests of family-labor farms, organization (support for cooperative intentions of business entities), information (creation of unified information environment for access to the technologies. materials. investment), infrastructure (road development. logistics. marketing. service centers. etc.), including the expansion access of business entities of ethnoeconomy at the public procurement market, simplifying the interaction with regulatory. supervisory and law enforcement agencies.

The provided economic and sociological research fully confirmed the hypothesis that the marketability of business practices of the population of the region and the base value of reproducible resources for the economy of the Republic of Karachay-Cherkessia are at the high level.

The objective of a particular attention and importance in this case are the measures to reduce institutional deficits in the development of entrepreneurship in all sectors of multistructure economy in peripheral regions, convergence fragmented markets in the region on the basis of creating a modern transport and logistics infrastructure and the development of forms of cooperation links between producers, peasant farms with, forming a large network of business-structures.

So, the content of structural reforms in Russia conceptually cannot be restricted by more than once manifested tasks of macroeconomic proportions, the redistribution of financial flows in favor of the innovative economy sector, the decentralization of government, and the reduction of the government's share in the economy, and others.

The most important systemic part of the structural economic reforms should be the creation of institutional and infrastructural conditions for the capitalization of the resources of the vast economic sector of the archaic (ethnoeconomy) peripheral regions, based on the initiative and activity of family-labor economies which could become an additional source of economic growth in Russia.

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Re-Examination of Calendar Anomalies in the Indonesian Stock Market

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Abstract:

This study re-examines three well-known calendar anomalies of stock returns, including the effects of month-of-year, the turn-of-month, and the weekend in the Indonesian stock market during the period 2001 to 2014. The multiple regression analysis with dummy variables is employed to empirically re-examine differences of the stock returns in each calendar anomalies period. Out of the three calendar effects re-examined, the study only found the existence of two calendar effects, i.e., the turn-of-month and the weekend effects.

Two major findings are documented. Firstly, the returns were abnormally high on the last trading days of the month and on the first four-trading day of the subsequent month, respectively. Secondly, the returns were abnormally high on the Friday, but it was abnormally low on the Monday. The existence of these anomalies has imperative implications for the hypothesis of efficient market and the investors' trading behavior. These findings shed some lights for the investors in determining the right timing for investing their monies as well as for gaining abnormal returns.

Keywords: stock market, calendar anomalies, abnormal returns, market efficiency, Indonesia.

JEL Classification: C32, C53, G39.

Introduction

Calendar anomalies are anomalies in stock return that related to calendar, known as phenomena founded in financial market; particularly in stock market. According to Brooks (2004), calendar anomalies could be loosely defined as the tendency of financial asset returns to portray systematic fashions at certain times of day, week, month or year. Several previous studies have been encountered an existences of calendar anomalies in many stock markets globally. These anomalies are of particular interest due to their presence contravenes the market weak-form efficient hypothesis, because asset prices are not random, but those asset prices predictable based on some calendar effects.

There are various types of calendar anomalies documented by previous researches. Returns are systematically lower or higher depending on the time of the day, the week day, the week of the month and the MoY (Elton and Gruber 1995). In certain months of the year, the stock returns are found to be highly abnormal as a result of month-of-year (MoY) effect, namely January, and in some trading days within a month as a result of the turn-of-month ToM effect. Lastly, in certain specific days of week, the stock returns are found to be highly abnormal as a result of the day-of-week (DoW) effect, namely Friday.

The studies on calendar anomalies have been intensively emphasized on the developed stock markets such as in the stock markets of the US (Gibbons and Hess 1981), Japan (Kato and Schalheim 1985), Canada (Tinic *et al.* 1987), Greece (Floros 2008), and Russia (Compton *et al.* 2013). Similar studies have also conducted on the emerging markets such as in Nigeria and Zimbabwe (Ayadi *et al.* 1998), Ghana (Ayadi *et al.* 1998), Jordan (Maghayereh 2003), eastern Europe (Ajayi *et al.* 2004), China (Gao and Kling 2005), Thailand (Chan *et al.* 1996; and Tangjitprom 2011), India (Raj and Kumari 2006), Bangladesh (Bepari and Mollik 2009; and Rahman and Amin 2011); Malaysia (Muhammad and Rahman 2010), and Pakistan (Khan *et al.* 2014). In addition, there have been some previous studies conducted across seven developed stock markets, comprising Australia, Japan, Canada, the UK, Japan, French and Singapore (Condoyanni *et al.* 1987) and across four Asian stock market, consisting of Malaysia, India, Singapore and Thailand (Chan *et al.* 1996).

Meanwhile, the studies on the Indonesian stock market have been limited comparing to the vast growing of the market in the region. Studies on the calendar anomalies on the Indonesian stock markets have been conducted by Kamaludin (2004), Cahyaningdyah (2005), Sumiyana (2008), and Iskanto (2015). These studies empirically investigated the DoW effect for the period 1993-2003 (Kamaluddin 2004), the week-four effect and the January effect for the period 2001-2003 (Cahyaningdyah 2005), the DoW and Monday effect for the period from January to December 2006 (Sumiyana 2008), and the weekly and monthly effects for the period 2010-2014

(Iskamto 2015), respectively. These studies documented mixed evidences, some found the existences of the calendar anomalies and some other found the otherwise.

Unlike the previous studies on the calendar anomalies in Indonesia stock market, which only investigated several calendar anomalies and focused on shorter period of the study, this present study re-examined more comprehensive types of calendar anomalies and utilized a longer period of study. Specifically, this study has several advantages compared to the earlier studies on this issue in the Indonesian stock market. Firstly, this study tested three kinds of calendar anomalies, namely the MoY effect, the ToM effect, the weekend effect and the January effect. Secondly, this study utilized longer study period from 2001-2014 (15 years), comprising 3,369 observations. To the best of our knowledge, this study is among the first studies to re-examine the calendar anomalies in Indonesia by adopting the longest study period.

By using the daily stock returns and applying the parametric statistics by multiple regression analysis, the findings of this study are hoped to shed some lights for investors to design trading strategies to gain abnormal return on the basis of such anomalies.

The rest of the study is organized in the following sequences: the next section highlights the previous studies on the calendar anomalies both in the advanced and emerging markets. The research method and data, on which the analysis is conducted, are presented in the Section 3. Section 4 discusses the findings and implications of the paper. Finally, Section 5 concludes the paper.

Conclusions

The purpose of the study is to re-examine the presence of calendar anomalies in stock market of Indonesia during the period 2001 to 2014. The study empirically explored the existences of the three well-known calendar anomalies, *i.e.*, the MoY effect or the January effect, the ToM effect, and the DoW effect. Empirical evidences showed that the ToY effect was inexistence in the stock market of Indonesia, even though the average abnormal return during December and January were relatively higher as compared to any other months. Then, the ToM effect was documented to exist in Indonesia, implying that the abnormal returns in the stock market of Indonesia was concentrated on some days within the last trading day, also on few trading days at the beginning of the next month. Finally, the study found that the weekend effect was also existed in the Indonesian stock market, denoting that the returns on Friday were abnormally high, while the returns on Monday were abnormally low.

In a nutshell, the study concluded that the calendar anomalies have existed in the Indonesian stock market during the period 2001 to 2014. These findings shed some lights for the investor in the Indonesian market to grasp the opportunity to make profit due to the existences of calendar anomalies in the market. However, the investor should also consider the transaction cost, if they want to exploit the opportunities of the weekend effect and the ToM effect. This could be very helpful to decide the investment timing for the investors. Thus, this allows the investors to develop the proper trading strategies to gain those abnormal profits on the basis of such anomalies.

The findings of the study are based on the methodology outlined above. For more reliable and robust findings, further studies should cover broader stock market worldwide with a comparative treatment. It is also suggested for further researches to investigate the existence of calendar anomalies across industrial sectors of the stock market, including the recent emerging of the Islamic stock markets. Additionally, further researches should utilize longer period of the study so that the finding could be generalized for different stock markets with similar characteristics.

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The Role of Human Capital in Providing Innovation Security of the Region

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Abstract:

Innovation security is one of the most important imperatives of sustainable development of the region in the long term. The primary task of providing innovation security in the region is to build and maintain its human capital, which is an embodiment of knowledge, competencies and motivations, concentrated in a particular area that are inseparable from their possessors. Article considers the major vital interests and threats to the region in the context of the development of its human resources component of the regional innovation system. The catalyst and inhibitor factors of building the capacity of the regional innovation system, affecting the overall competitiveness of the region are highlighted. The development of human resources component of the regional innovation system of the westernmost subject of the Russian Federation, an exclave on the Baltic Sea – the Kaliningrad region, is evaluated in the logic of innovation security approach. The role of human capital in the provision of innovation security of Kaliningrad region is shown.

Keywords: innovation security, human capital, regional innovation system, kaliningrad region.

JEL Classification: D83, D85, F52, O33.

Introduction

Displacement of the researchers' interest from studying the economic-geographical position of the region towards its properties as a source of competitive advantage has occurred against the background of the empirical registration of a number of demographical phenomena conceptualized as 'edge cities' (Garreau 1991), 'cities – states' (Peirce 1993), 'mega-regions' (Florida 2008) and others, and the development of spatial (formerly social, human) capital theories (Becker 1964, Shultz 1971, Hall 1999, Ferragina 2013, Camagni and Capello 2013). From this perspective, the capital of the region is considered as a set of local assets (natural, human, organizational, cognitive, network) that make up its competitive potential. The idea of territorial cohesion made the central point of the new approach to regional development, which is the territorial dimension of sustainability and provides a basis for the collective development of the region in three areas: territorial efficiency, territorial quality, territorial identity (Torre and Wallet 2014). In each of the areas a significant attention is paid to man, as a source of competitive advantages of the territory (the carrier of knowledge, a part of the social capital, etc.), as a subject, that sets a vector of development of the territory, as the user of the infrastructure in a particular area. It should be noted that the dependence of the geography and social development factor has been noticed by the French sociologist of the XIX century Frederic Le Play, who wrote that the place determines the conditions of labour, and labour, in turn, determines the organization of the family and society as a whole (Le Play 1879).

The study of the social component of the region in its representation as a territorial socio-economic structure led to the formation of a special scientific approach to the competitiveness of the region, allowing to take into account the impact of social, cultural, cognitive proximities on the course of regional development processes (Mikhaylov 2016). From this perspective, the strategic competitive advantages of the region lie in tacit knowledge, which cannot be partially or completely alienated from its creator, codified and systematized. This knowledge is expressed in skills, abilities, experience, skilled personnel, technical practices, formalized norms of behaviour, culture, etc. The knowledge classification suggests that there is a pure tacit knowledge that cannot be codified, articulated or explicated, and the tacit explicit knowledge, which at the moment is implicit, but can be explicated in the future (Brokel and Binder 2007). The primary feature of tacit knowledge is its causal ambiguity generated by the inability of formal expression. The dual nature of this kind of knowledge is characterized by implicitness (i.e. tacitness), complexity, stability, integrity of transmission (Szulanski 1996). The diffusion of tacit knowledge reveals another special feature of its type – 'stickiness', characterized by increased complexity of its transmission. Sharing accumulated tacit knowledge between actors in the region is undertaken through collective learning process, visualized by David Kolb as a learning loop (Kolb 1976). Efficiency of learning depends on many factors: the difference in the technological processes of regional firms (knowledge base, agility in technological change, the nature of technologies), dependence on external sources of knowledge or information, such as other firms, suppliers and others, various depths in the level of technological development (Lall 2001). However, the primary role is played by the human capital that is accumulated in the region, which can be defined as a totality of innate abilities and acquired knowledge, skills and motivations localized on the common territory (Becker 1964).

Conclusion

After the collapse of the USSR the innovation system of the Kaliningrad region has experienced significant structural changes, including its human resources component. Dramatically reduced the number of research staff, their composition has changed. Due to the transition to a market economy model and the collapse of economic relations established in the Soviet period, there have been major changes in the region's economy. As a result of the economic restructuring, a range of activities have minimized or reduced their significance (e.g. pulp and paper industry, ferrous metallurgy, light industry, etc.). This resulted in a decline in employment in these areas and the drop in the demand for corresponding skills.

At the moment, an innovation system of the Kaliningrad region is in its infancy. New institutions are being created, new actors emerge, new cooperative links and networks of cooperation are being formed, and new research directions are developing. In accordance with the requirements of the time, the objectives and priorities of the region have changed. The innovative model of development came to the forefront, which implies the presence of a high level of accumulated human capital. In this context, the key problems of the region associated with an increase in the efficiency of the HR component of its innovation system have aggravated, which is expressed in a low level of per capita income of the population, the presence of institutional and tariff barriers that restrict labour mobility, the lack of involvement of the population in continuous education and the narrow coverage of the current and future staffing needs by the regional educational system.

Some steps to address these problems in order to increase the innovation security in the region have already been taken. In the Kaliningrad region formed favourable conditions for the accumulation of knowledge and competences required for the economy of the region through the attraction of qualified specialists from abroad, and increasing the efficiency of internal education sector. With a substantial support from the state, in the region was founded and is actively developing one of the ten federal universities of Russia, included in the top-100 Russian universities. By the share of students as well as by the number of people employed with higher education, the Kaliningrad region is ahead of most of the NUTS2 regions of the Baltic Sea region and the subjects of the North-West Federal District of Russia. The region has an effective system of reproduction of academic staff, which enables to develop new breakthrough research areas such as life sciences, neuroscience, biochemistry, genetics and molecular biology, and others.

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The Time-Varying Correlation Between Macroeconomic Uncertainty, Inflation and Output Growth: Evidence from AR(p)-EGARCH Model for Sri Lanka

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Abstract:

This study utilizes an AR(p)-EGARCH model to examine the causal links and volatility transmissions between inflation uncertainty, output growth uncertainty and macroeconomic performance measured by inflation and output growth in Sri Lanka for the period 1993-2014. The empirical results show that higher inflation does cause welfare loss, both directly and indirectly, through the inflation uncertainty channel. Thus, there is an overwhelming support for Friedman-Ball hypothesis that higher inflation is accelerating inflation uncertainty. Secondly, inflation is negatively affecting output growth (and its uncertainty) while inflation uncertainty is increasing output growth. Finally, output growth generates output uncertainty while there is no evidence of the mutual effects of nominal and real uncertainties on one another. Our estimated results suggest that policy makers should make use of monetary policy for achieving multiple policy objectives such as reducing inflation and its volatility while restoring sustained and stable economic growth.

Keywords: inflation uncertainty, output uncertainty, inflation, output growth, AR(p)-EGARCH, Sri Lanka.

JEL Classification: C22, C32, C51, C52, E0, E10, E30.

1. Introduction

The central objective of macroeconomic policy makers is to attain economic growth and to keep inflation at a low level. The reason is that high and volatile inflation is harmful to economic growth due to its significant welfare costs. Thus, the issue of whether inflation and its uncertainty have significant positive or negative effects on real economic activity, has been the matter of extensive debate among economists and policy makers because of its relevant policy purpose. The issue gets further significance in developing countries where high and volatile inflation frequently prevails. It is important for policy designers to understand the causal linkages and volatility transmissions between inflation and its uncertainty in order to design concrete macroeconomic policies for targeting inflation while considering sustained economic growth.

Inflation uncertainty is both the result and cause of higher inflation. Theoretically, the issue got significance with emergence of Friedman's (1977) claim that rising inflation leads to higher inflation uncertainty. Ball (1992) strengthened the Friedman's idea by arguing that higher inflation not only cause inflation uncertainty but also poses significant negative welfare costs on real economic growth as it distorts the effectiveness of price mechanism and economic efficiency and results a decline in economic growth. Conversely, the positive effect of inflation uncertainty on level inflation was proposed by Cukierman and Meltzer (1986) while the negative effect is illustrated by Holland (1995). There is also ambiguous debate on the dynamic interactions between macroeconomic uncertainty and economic growth. There is also heated theoretical and empirical debate on the trade-offs between inflation and economic growth. Theories and related empirical studies on the relationship between inflation and economic growth have exhibited either no relationship such as Sidrauski (1967), negative relationship, such as Barro (1995), Fischer (1993) and positive relationship such as Tobin (1965) and Mallik and Chowdhury (2001). Further, both output uncertainty and inflation uncertainty may affect output growth and also have considerable direct and indirect effect on one another. Theoretically, there is a lack of consensus and empirically, the issue of liaison between macroeconomic uncertainty and inflation and output growth is still under the coverage of empirical research as there exists different views on the interaction between macroeconomic uncertainty and performance, particularly in developing countries.

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Like the other emerging and developing countries, economic growth and price stability have been the twin leading objectives of monetary policy framework of Central Bank of Sri Lanka (CBS). Monetary policy authority has employed and even currently utilizing different policy measures (e.g. credit, monetary aggregate and interest rate channels etc.) from the very early till recent in various political regimes to attain these twin targets. The argument is that generally, monetary policy makers in Sri Lanka consider inflation as harmful to real economic activity and aims price stability an essential goal to restore sustained economic growth. As the empirical studies are still indecisive about whether the macroeconomic stability promotes output growth or output losses in the short run due to policy contractions. Following such line of reasoning, the main aim of this study is to empirically investigate the controversial and dynamic issue of the causal links and volatility transmissions between inflation, its uncertainty, output growth and real uncertainty for Sri Lanka³. Being located in a poor and relatively less developed region of the world and also as a developing country, the sample area is an ideal region for the increasing macroeconomic fluctuations and higher inflation. Historically, the country is inherited economic problems such as macroeconomic and political instability, over population, poverty and unemployment. This empirical analysis is made through utilizing the AR(p)-EGARCH type model to assess whether higher inflation is having any consequences on future inflation and economic growth and whether, output uncertainty and inflation uncertainty affect inflation and economic growth.

Our empirical findings show that higher inflation does cause negative welfare costs through direct and indirect channels. The estimated results also propose that inflation rate induces its uncertainty and reduces output uncertainty. Output growth is leading towards real uncertainty while there is negative effect of higher inflation on real economic activities and inflation uncertainty is positively affecting output growth. Thus, a robust evidence in support for the casual dynamics and volatility transmissions between macroeconomic uncertainty and inflation and economic growth would deliver a solid ground for the development of macroeconomic models to empirically test such multidimensional relationships, specifically in less developing countries.

The rest of the paper is organized as follows: section 2 briefly presents an overview of the existing theoretical and empirical literature on the causal links and volatility spillovers of macroeconomic uncertainty on macroeconomic performance; section 3 outlines empirical approach and estimation strategy while the data and data sources are presented are in the next section. The empirical results and discussions are documented in section 5, followed by final concluding remarks and policy recommendations.

³ This study is confined only to Sri Lanka as there is some literature (e.g. Javed *et al.* (2012), Chowdhry (2014) and Paul (2012) on other three major South Asian economies like Pakistan, India and Bangladesh while for the rest of three countries (Nepal, Bhutan and Maldives), the required monthly data is not available.

Conclusion and policy recommendations

High and sustained economic growth along with low and stable inflation is the central objective of macroeconomic policy but there is perceived trade-off between lowering inflation and attaining economic growth. Also, there is lack of consensus and clear cut empirical evidence on the effect of higher inflation on inflation uncertainty and its inverse. Importantly, the situation is also same on the effect of real uncertainty on output growth and inflation. This study has, therefore, empirically inspected the causal links between inflation, output growth and their related uncertainties in an ideal economy, experiencing high macroeconomic instability and economic uncertainty. The study also attempt to empirically determine whether uncertainty of both inflation and output growth rate is symmetric or asymmetric. Explicitly, the study tries to test the various related hypotheses developed by Friedman (1977), Ball (1992), Cukierman and Meltzer (1986), Pindyck (1991), Holland (1995) and Dotsey and Sarte (2000) by the testing of various parameters for Sri Lankan economy.

Using AR(p) - EGARCH methodology to measure conditional variances for both inflation and output growth, the empirical results have several important conclusions for the study area as well as for the other neighbouring developing countries. Firstly, the widely-used Friedman's doctrine of positive impact of inflationary shocks on inflation uncertainty is strongly evidenced. Also, inflation is a negative determinant of economic growth as observed by the estimated results directly and indirectly (through the channel of nominal uncertainty as proposed by Friedman (1977) Thus, the estimated findings explore the view that higher inflation has real effects and demands for the goal of lower and stable inflation for the central monetary authority of the country. Secondly, output growth is a positive determinant of real uncertainty. This result is robust but theoretically, there is indecisive literature on the effects of real growth on its uncertainty. Still, our estimated results have important policy implications for the construction and designing of macroeconomic and macro econometric models for ensuring economic growth. The results also impart the view that policy makers should aim to attain stable and robust economic growth. Specifically, it evaluates the analysis of business cycles variability and economic growth and argues that unlike to the separate studies of the both (as evidenced in the earlier business cycles literature), the macroeconomic modelling makers should include both output growth and real variability in their macroeconomic modelling frameworks. Consequently, the claim that output growth is reducing real uncertainty does not appear to find support here. Thirdly, higher inflation is rising output growth uncertainty and inflation uncertainty is encouraging output growth. These results imply that higher inflation has not only its direct effect on inflation uncertainty but also on real growth and its stability.

The empirical findings of this study are vital to macroeconomic policy makers, macroeconomists, financial analysts, academicians and central bank officials in understanding the casual dynamics and volatility transmission between inflation, its uncertainty, output growth and real uncertainty. This study imparts guideline for them to take appropriate policy measures to maintain price stability along with output growth stimulation. This study eliminates the doubts existed in the empirical studies on the cause and effect of inflation and its uncertainty. It also specifies whether inflation has any significant effect on output growth and whether economic growth uncertainty has consequences for level growth and inflation. While filling the knowledge, this study has important theoretical implications for the policy makers to expectations formations and macroeconomic uncertainty process. In this study, the empirical strong evidence that inflation raises future inflation uncertainty necessitates the need for better monetary stabilization and demand for targeting inflation by independent authority of central bank. More importantly, the current macroeconomic environment of the Sri Lankan economy (where inflation is rising continuously), appeal for more dynamic stabilization policy implication for central banks to deal with high inflation along with safety to economic growth. The causal links between inflation, output growth and their uncertainties also augment the policy makers to explore the desirable policy frame work. The study also tests the validity of various hypotheses and point out the existing phenomenon in the study area. This study suggests the use of monetary policy for achieving multiple policy objectives such as reducing inflation and its volatility after considering economic growth. However, the study calls for empirical work needed on uncertainty of interest rate and exchange rate in order to better understand the causal direct and indirect interactions of inflation and output growth and their uncertainties. Further research may also require to examine the possible structural breaks and non-linearities of these variables and to augment the findings with other GARCH family models.

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Population Dynamics: Geographical Differences in Countries of the Baltic Sea Region

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Abstract:

Prior to the 1990s, the population of all states of the Baltic region increased in spite of the countries' natural, social, economic and political differences. Since then, the cross-country particularities have become significant due to the increased differences of both natural and, in particular, migratory population movements. Using the graphical-analytical methods and typology analysis techniques, the authors analyze demographics of the nine countries of the region and identify their demographic types by features of the specific components of their population dynamics.

The article presents the main reasons for the qualitative differences. It is noted that the concept of the Second demographic transition cannot be applied at least to a part of the Baltic region, and the attention should be paid to the interdependence of economic and demographic processes.

Keywords: baltic sea region, population dynamics, population reproduction, migration, second demographic transition.

JEL Classification: F22, F52, F66, J61.

Introduction

In the second half of the twentieth century, there were dramatic changes in population dynamics in the Baltic region countries¹. In some states, such as the Nordic countries, the initially relatively high growth rate declined. In others, e.g. the Baltic States, the population began to decline since the beginning of the 1990s. In Russia, after the drop the number of inhabitants began to rise again in the 1993 – 2009. Germany saw a slight reduction in the 1970s and 1990s. In Poland, the population was shrinking in 2010 and in 2012 – 2015.

With all the differences of dynamics, ranks of countries in terms of population have not changed over 65 years. As before, the Russian Federation has the first place, Germany coming second, and Poland third, followed by Sweden, Denmark and Finland. The smallest in terms of population size are Lithuania, Latvia and Estonia.

In the context of the Baltic region states, the article considers the components of population dynamics (natural and migratory movement), as well as the main causes of emerging qualitative interstate differences in the demographic situation.

¹ The countries of the Baltic region include Russia, Germany (until 1990 existed in the form of two states – Federal Republic of Germany and East Germany – and West Berlin with its special status), Poland, the three Nordic countries – Sweden, Denmark and Finland and the three Baltic states, which until 1991 were part of the Soviet Union – Lithuania, Latvia and Estonia. All of these countries, and they alone, have access to the Baltic Sea, which has a significant impact on their development.

Conclusion

The analysis of demographic processes in the countries of the Baltic region enables identification of several groups of countries differing not only in their specific population dynamics, but also in the level and specificity of the socio-economic development impacting on the geographical differences of demographic and migratory behavior of the population and, consequently, on indicators characterizing the demographic processes and structures. Current research results suggest four groupings:

1. *Denmark, Sweden, and Finland*: population growth is ensured by both the excess of births over deaths and the influx of migrants.
2. *Germany*: a positive balance of migration fully or partially compensates for the natural loss of population, which marked the first half of the 1970s.
3. *Lithuania, Latvia, Estonia and Poland* constitute a separate subtype: the population is reduced as a result of natural population decline (since the beginning of the 1990s) and migration outflows (from 1989 – 1990). In Poland, the birth rate exceeded the death rate (except for a brief period from 2002 to 2005, with a small natural decrease) that partially or fully compensates the loss of migration.
4. *Russia*: a positive balance of migration fully or partially compensates for the natural loss of the population that was evident from 1992 to 2012.

The main disadvantage of the demographic situation in all countries of the Baltic region is sharply narrowed reproduction of the population, and a long-going depopulation. Attempts to replace the missing labor by the influx of migrants (in countries with a positive balance of migration), although being economically advantageous, can lead to unpredictable political consequences, especially when it comes to the influx of immigrants from countries with very different civilizational features. Therefore, it seems appropriate to undertake an active demographic policy aimed at increasing the birth rate to a level that provides at least the simple (*i.e.* basic) reproduction of the population. The outflow of the population (usually of young age) from countries with a high negative net migration (the Baltic states) makes it even more difficult to increase the birth rate and cannot be evaluated positively either from the standpoint of economic development of the respective countries or in terms of reproduction of the population.

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Forecast of Development of the Russian Machine-Building Complex in the Context of Unstable Economic Environment

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Abstract:

The article is devoted to identifying the peculiarities and justification of the priority areas of development of the machine-building complex of the Russian Federation. Based on the analysis of statistical data on the state of the productive capacity of the Russian machine-building complex, the author has developed the scenarios of the strategic production potential of the Russian machine-building industry for the period up to 2025: inertial, modernization, partner; the choice of a partner scenario of development as the target has been justified. It was found that the Russian economy has necessary conditions and opportunities to solve the issue of complex modernization and ensure the pace of the advanced development of domestic machine-building enterprises. It is justified that an effective state import substitution program, which corresponds to modern requirements and is capable of ensuring the integrity and diversity of the process of transformation, must become the foundation for the realization of these goals.

Keywords: machine building, production potential, predictive model, scenarios of development, strategy, multiplier effect.

JEL Classification: E51, L60, L69.

Introduction

The development of machine-building production in Russia in the medium and long term will be defined by the volume of investment in the renewal of the material and technical base of the enterprises and by the level of competitiveness of the produced goods in the domestic and foreign markets. Investment activity of buyers will be the main factor in creating the demand for engineering products. The logical consequence of the activation of innovative activity should be an improvement in the competitiveness of enterprises in both domestic and foreign markets.

The results of the analysis of the prospects of strategic development of the Russian machine-building industry (Karsuntseva 2014) suggest the presence of three alternative solutions to a systemic problem.

1. Inertial scenario, which involves maintaining the current trends in the development of machine-building complex of the country without any major changes. The implementation of the inertial scenario will cause a further increase in the share of imports in the domestic market and the decline in the share of Russian exports with the sequential degradation of the domestic machine-building industry.

The inertial scenario does not require any substantial action by the state. The role of the state can be minimized and be, for example, in continuation of policies to encourage certain areas of research and project activities, in maintaining an optimal level of tariffs on the import of equipment from abroad, in increase of the level of localization of production equipment, in subsidizing and other forms of support of domestic producers that do not contravene the conditions and requirements of the WTO.

In the case of the implementation of the inertial scenario, the current negative trends in the development of the machine-building complex will remain, which may lead to further undesirable consequences:

- production capacity of enterprises will decrease and stagnate (degrade) to a complete loss of the key technologies of the Russian machine-building industry;
- share of imported equipment in the Russian market could grow to 90% within 5-7 years, and complete replacement of domestic products is possible for certain types of machinery equipment (Galeeva 2015);
- reduction in the number of people employed in machine-building industry due to a sharp drop in production (Tatarskykh 2014).

The implementation of the inertial rate means an approaching industrial collapse, the loss of the domestic market, deterioration of production potential of the machine-building industry (Fatkhutdinov 2011). In this case, it will cause serious damage to the technological security of the Russian economy and sharp increase in the total costs in related industries (energy, metallurgy, mining sector, etc.) due to the increasing dependence on imports. The manifestation of the negative impact of foreign oligopolists on the Russian economy is also possible. In the

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macroeconomic scale, all this will lead to an increase in unemployment and social tension in society, a significant deterioration of the geopolitical position of the Russian Federation.

2. Modernization scenario that provides constant state support in the field of research and development of domestic producers and modernization of material and technical base of enterprises, in promoting the transfer of Western technology, in the implementation of measures to improve the investment attractiveness of the machine-building complex.

Intensification of processes of creation of joint ventures with leading foreign manufacturers upon terms of technology transfer and a high level of localization of production is expedient in the interests of the national economy, as it allows to quickly master the production of new products and compete on equal terms with foreign companies in both domestic and foreign markets (Tsenina *et al.* 2016). State participation in the implementation of this scenario involves the formation of conditions to ensure the investment attractiveness of the Russian economy for the foreign capital. However, the importance of public control over the activity of enterprises of strategic importance for national security is worth noting (Ershova 2010).

The modernization scenario is not considered further in the work as a target, as excessive amounts of investment at the design stage will lead to an outflow of funds and render impossible the normal implementation of the next stages of the life cycle of innovation – commercialization, diffusion and routinization.

3. Partner scenario is described by modern trends of formation and development of institutional and organizational alliances on the basis of close cooperation between public authorities and private businesses. It is an active use of possibilities of public-private partnership (PPP) (Deryabina 2010), which ensure the implementation of innovations throughout the entire period, from creating the project to its final phase (Starkey 2002). The positive results of the implementation of a partner scenario include: dynamics of growth in the number of innovative design-oriented businesses (Davenport and Beck 2002) in the machine-building complex; reducing the time to create and develop new products through strengthening the coordination of the research and development (Nilsson and Olve 2001); growth of co-financing from non-budgetary sources; increase in the likelihood of successful implementation of investment projects and rational choice of priority areas of research and development.

Conclusion

Innovation and technological renovation of production facilities of the machine-building industry should have a positive effect on the efficiency of economic activities of enterprises and their contribution to the formation of the general results of the socio-economic development of the country (Table 4).

The expansion of industrial activity will be followed by an increase in human resource potential, which has a positive impact on macroeconomic indicators such as employment and unemployment. However, it should be noted that the dynamics of the headcount of industrial production personnel will be somewhat lower than the rate of industrial production (Table 4). The increase in the personnel headcount will be ensured by the growth of production capacity and increase in the shift index, while the increase in production will primarily be determined by the productivity of labor. This factor will be crucial in shaping the performance of production activities of enterprises throughout the forecast period, and its value will be determined by the pace of renovation of production equipment.

Table 4 - Assessment of the impact of raising the level of use of production potential of the machine-building industry on the dynamics of macroeconomic indicators of the Russian Federation: the target scenario, %

Indicator	Typical period 2014, %	Medium-term period (2016 - 2020)	Long-term period (2020 - 2025)
Rate of growth of gross value added	100	176	248
Rate of growth of the share of value added in production output	100	110	126
Rate of growth of the industrial personnel headcount	100	103	112
Rate of average wage growth	100	155	215

The main factor determining the formation of positive dynamics of macroeconomic indicators of Russia will be a multiplier effect obtained as a result of innovation and technological re-equipment of enterprises of the machine-building complex. The implementation of the integrated national program of import substitution in the machine-building industry will support cross-sectoral interaction, which would entail a substantial increase in investment and innovation activity in related industries. Sustainability of machine building and economy of the state as a whole will depend on the number of domestic manufacturers of machine-building products involved in the mechanism of innovation multiplier. This implies that an increase in the level of use and innovative development of the production potential has the dominant influence on the formation of the system of socio-economic factors in the development of the Russian economy, while the sustainability of economic growth is primarily determined by the level of innovation and investment activity of the enterprises of the real sector of the economy.

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Features of Migration Processes in Different World Industries in the Second Half of the XX Century

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Abstract:

The study of driving forces and particular changes in the territorial structure (or spatial organization) of the global industry is one of the traditional tasks for specialists in economic geography and economists. Its relevance is confirmed by the significantly accelerated processes dynamics in the context of globalization. The article shows that the structural approach in the study of changes in the spatial organization of the world industry must be combined with systemic and historical approaches. Therefore, the article presents the analysis of changes in the global industry for 50 years based on described selected research methodology. The authors reveal the forces, which have influenced the spatial organization of global industrial production, as well as characterizes structural changes and migration processes in the global industry taking place in the second half of the XX century. It is noted that the point of influence of the global industrial production has shifted to the Asian region.

Keywords: migration processes, industry, spatial dynamism.

JEL Classification: R12, F22, N50, N60.

Introduction

Globalization and innovative development led to profound changes in the sectoral structure of the global economy. The economy has been "servicized". Currently, the proportion of the distribution and services (tertiary sector) in global GDP is 62.4% (the proportion of secondary industry is 31.1%, agriculture - 6.5%, 2014) (The World Factbook). However, recall that despite the domination of the distribution and services in the creation of the global GDP and employment of population, the source of the progress of civilization and its measure is the improvement of forms and methods of material production, and primarily industrial production.

Deindustrialization, considered from the perspective of having the reduction of employment in the global industry, does not mean "irrelevance" of this sector to the economy (Rodionova 2014). Industrial development is crucial in achieving high performance and efficiency of the whole economic mechanism.

In this study, we were interested in the processes taking place in the global industry in the second half of the XX century (from 1950 to 2000). Enhancing the role of manufacturing industry in the sphere of material production in the concerned period was caused by a number of features of the postwar economic development of all countries in the world. It should also be noted that a number of industries from other sectors of the economy actually moved into the industry (including that from public catering sector - the production of semi-finished products. Now many foods are available in the retail network after industrial processing, etc.). Construction industry, as a new sub-industry, was also developing rapidly: construction increasingly has become just the assembly of finished parts of buildings and structures. Mechanization in all sectors of the economy largely contributed to the increase in industrial output.

New productions and advanced industries, such as nuclear industry, aerospace, electronics, bio-industry, etc. emerged in global economy. Initially, their development was carried out in the sector of military production, and only after a while their emerged production of consumer goods based on military technical background. Today the largest part of the R&D expenses accounts for most advanced industry sectors. Many new products (chemical fiber, synthetic rubber, detergents, medicines, vitamins, etc.) were commercialized. New and even old industries were engaged in manufacturing of fundamentally new types of products with the same purpose that was produced previously, though more efficient and advanced. Thus, manufacturing of synthetic detergents such

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as washing powder, cleaning preparations, bath gels and shampoos, etc. was entered into mass production. Technical improvement of traditional types of products was carried out commonly enhancing their production technology and quality. The impact of scientific and technological revolution has affected both the changing demand of production and consumer demand of the population that also determined the differences in the growth and development rates of individual plants and industries.

In the second half of the XX century, primarily under the influence of scientific and technological revolution, there were important shifts in both the sectoral structure of global industry and at the level of individual sectors of the manufacturing industry. Global industry system was formed based on the interaction of factors and the subordinated location of production facilities in many industries and various industrial territorial combinations in the territory of countries and regions. Changes occurred in various structures of global industrial production (global industry): industry-specific, organizational, and spatial structures.

Conclusion

In summary, we conclude the following. A feature of the contemporary system of the global industry is its high spatial agility. Analysis of large amounts of collected statistical data, calculations of indicators and indices of structural changes, and cartographic monitoring of industries at country and regional level allow us to conclude that in the second half of the XX century there were significant migrations of global industrial production in the various branches of mining and manufacturing. However, they had different nature: in some industries shifts, can be considered as pivotal, while in others they were ordinary. All industries included in the analysis have shown a regrouping of forces, the redistribution of global industrial production at both country and regional level.

At that, in the wake of the significant difference in the growth rate of industrial production in different regions of the world, they are more clearly differentiated into the advanced and the underperformed regions. The observed structural changes often correspond to the intensification of disparities in the distribution of industry on a global level rather than smoothing this level. Characterizing the spatial structure of global industrial production, it should be noted that the differences in terms of "North" – "South" (developed nations - developing countries) still remain. Though competition in global markets forces entrepreneurs of advanced nations to move "the lower and middle floors" of production to less developed countries (where labor is cheaper), especially if the workforce training level is sufficient for certain types of enterprises or industries. As already mentioned, shifts of production capacities to developing countries was noted in many industries.

Spatial redistribution of industrial production between countries and regions of the world occurs mainly due to the "semi-periphery" of the world economy. Industrial production moves to the countries of the "periphery" at a slower pace, whereas the countries of "deep periphery" (least developed, according to the UN terminology) are almost not included in international production.

The identification of the Asian priorities in the new situation of world industrial powers can be considered as the current general trend. We can say that there is a new balance of power. The point of influence of world industrial production, which previously was in Western Europe, in the second half of the XX century moved to North America, while currently it is directed to the Asian region.

Data analysis conducted by the authors on the development of the global industry in the period from 2000 to 2015, confirms once again previously identified trends and changes in the spatial organization of the world industrial production (Rodionova *et al.* 2009, Rodionova 2014, Rodionova *et al.* 2016).

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The Model of Risk Assessment in the Management of Company's Competitiveness

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Abstract:

The article concentrates on the topical problem of studying and considering the stochastic factors in the process of managing competitiveness of high-tech corporations. The paper puts forward an economic-mathematical model, which describes negative factors and their influence on the cost indicators of a knowledge intensive project implemented by a company, which tries to add to its competitiveness. The advantage of this model is its ability to take into consideration the specific features of a particular knowledge intensive project. The results of calculations completed under the model are given in the form of model analysis.

Keywords: competitiveness management of a company, risk identification, project life cycle, project costs, economic mathematical modeling.

JEL Classification: L23, O12, D81.

Introduction

It is a matter of fact that developing and manufacturing a product with new consumer properties often comes amid various risk factors (Thornton 2003, Yoe 2011). One of company's characteristics, when its competitiveness is to be assessed, is the company's ability to resist negative impact of uncertainty and risks (Chursin and Makarov 2015, Drucker 2007, Mensch 1975). As result it is necessary to identify and assess risks inherent in new projects of a company (Santo 1990, Hargadon 2007). The problem of identification and probabilistic estimate of risks in planning financial and economic activity of a company can be effectively addressed through the use of economic-mathematic modeling. The general approach in this case implies the assessment of potential losses derived from adverse impact of different risk factors with different probability of these factors manifestation.

Methods

Consider the process of risk management in the new projects implementation by the company in terms of knowledge intensive products. The project for the development of a new high-tech product is implemented in some stages, which are its life cycle (Kahneman and Tversky 1979; Bianco 2009). It is characteristic of projects implemented by a high-tech company, to have a predictive life cycle of its implementation that is fully described in the project plan (Farr 2011). As a rule, each stage of the project differs from every previous one. Each stage of the project corresponds to a certain set of actions and operations (Suhányi and Suhányiová 2014). Every project has its specific sequence of stages (Osadchy 2006). The possible sequence for a high-tech project is shown in Figure 1.

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Conclusion

Prediction of probable losses in the preparation for the project activities on the production of space products facilitates timely risk management and increase of the economic sustainability of the high-tech project implementation. Thus, measures for predicting and considering the probability of risk factors contribute to the preservation of the competitive advantages of the current project. Taking risks into account in the implementation of projects is one of the instruments that accompany the process of organizing the production of new types of products to enhance the company's competitiveness.

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Selected Determinants of Quality of Life and Their Implications for Health System

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Abstract:

Health spending in European countries grew until 2009 at a faster pace than in other sectors of the economy and the health sector is gaining a larger share of gross domestic product (GDP). At a time of financial and economic crisis in 2008 many European countries have begun to reduce health expenditure in order to cope with large budget deficits and increasing debt ratio. Although these restrictions were necessary, some measures may have an impact on the modification of the fundamental objectives of health systems. Continuous monitoring of data, health indicators and health systems is now extremely important. For this reason, it is essential to underpin the underlying determinants of lifestyle diseases in developed countries which influence health financing system directly, as well as indirectly and they are reflected in many indicators and determinants of life expectancy.

In this paper, I pay attention to selected determinants such as alcoholism, smoking and obesity that have side effects apparent not only from a macro point of view, but also greatly affect the quality of life of individuals, whether in primary or caused intentions.

Keywords: health systems, healthcare, quality of life, determinants, alcohol consumption, taxes.

JEL Classification: H51, I15, I18.

Introduction

European countries have spent considerable funds in recent decades to ensure the health of their population. Life expectancy at birth has increased in the member states of the European Union (EU) by more than six years since 1980 and reached 79 years in 2010, with premature mortality significantly reduced. More than three quarters of this age can be projected to survive without limitation of activity. Increasing life expectancy has been stimulated and prompted by the improvement of living and working conditions and certain types of behaviour of citizens in relation to health and but also better access to healthcare and quality healthcare. This is declared by indicators of significant decrease in mortality after a heart attack or stroke. Improvement of health brings in many cases considerable financial costs and therefore is the question of financing the health systems a priority in most countries.

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Conclusion

Health indicators and data, they are based on need to be monitored because of several reasons. They are extremely important for the assessment of the country and the effectiveness of its health sector. They can essentially affect the lifestyle of people and they overall well-being. The most important determinants are smoking, alcohol consumption and obesity, which are the subject of interest of this paper.

Social and economic costs cover the negative economic impacts of alcohol consumption on the material welfare of the society as a whole. They comprise both direct costs - the value of goods and services delivered to address the harmful effects of alcohol, and indirect costs - the value of personal productive services that are not delivered as a consequence of drinking. In industrialized countries, estimates of social and economic costs of alcohol use can reach a certain value of the Gross Domestic Product (GDP). Estimating the costs of the impact of alcohol on the material welfare of society is often difficult and requires estimates of the social costs of treatment, prevention, research, law enforcement, lost productivity and some measure of years and quality of life lost.

It is important to look at this problem also from another way, by a comparison of those costs and the benefits for the country, for the economy. It is also presented in this article. Basic costs that flow into the Slovak economy from alcohol consumption are high and are a big part of the state budget. Therefore, before every decision making, it is essential to take into account also this point of view and include it into the decision-making process to achieve the most optimal outcome for the health status of citizens and the homeland economy, also.

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