

JOURNAL   
of Applied Economic Sciences



Volume XII  
Issue 2 (48) Spring 2017

ISSN-L 1843 - 6110  
ISSN 2393 - 5162

## Editorial Board

### Editor in Chief

PhD Professor Laura GAVRILĂ (formerly ȘTEFĂNESCU)

### Managing Editor

PhD Associate Professor Mădălina CONSTANTINESCU

### Executive Editor

PhD Professor Ion Viorel MATEI

### International Relations Responsible

PhD Pompiliu CONSTANTINESCU

### Proof – readers

PhD Ana-Maria TRANDESCU – *English*

### Redactors

PhD Cristiana BOGDĂNOIU

PhD Sorin DINCĂ

PhD Loredana VĂCĂRESCU-HOBEANU



European Research Center of Managerial Studies in Business Administration

<http://www.cesmaa.eu>

Email: [jaes\\_secretary@yahoo.com](mailto:jaes_secretary@yahoo.com)

Web: <http://cesmaa.eu/journals/jaes/index>.

## Editorial Advisory Board

Claudiu ALBULESCU, University of Poitiers, France, West University of Timișoara, Romania

Aleksander ARISTOVNIK, Faculty of Administration, University of Ljubljana, Slovenia

Muhammad AZAM, School of Economics, Finance & Banking, College of Business, Universiti Utara, Malaysia

Cristina BARBU, Spiru Haret University, Romania

Christoph BARMAYER, Universität Passau, Germany

Amelia BĂDICĂ, University of Craiova, Romania

Gheorghe BICĂ, Spiru Haret University, Romania

Ana BOBÎRCĂ, Academy of Economic Science, Romania

Anca Mădălina BOGDAN, Spiru Haret University, Romania

Giacomo di FOGGIA, University of Milano-Bicocca, Italy

Jean-Paul GAERTNER, l'Institut Européen d'Etudes Commerciales Supérieures, France

Shankar GARGH, Editor in Chief of Advanced in Management, India

Emil GHIȚĂ, Spiru Haret University, Romania

Dragoș ILIE, Spiru Haret University, Romania

Cornel IONESCU, Institute of National Economy, Romanian Academy

Elena DOVAL, Spiru Haret University, Romania

Camelia DRAGOMIR, Spiru Haret University, Romania

Arvi KUURA, Pärnu College, University of Tartu, Estonia

Rajmund MIRDALA, Faculty of Economics, Technical University of Košice, Slovakia

Piotr MISZTAL, Technical University of Radom, Economic Department, Poland

Simona MOISE, Spiru Haret University, Romania

Mihail Cristian NEGULESCU, Spiru Haret University, Romania

Marco NOVARESE, University of Piemonte Orientale, Italy

Rajesh PILLANIA, Management Development Institute, India

Russell PITTMAN, International Technical Assistance Economic Analysis Group Antitrust Division, USA

Kreitz RACHEL PRICE, l'Institut Européen d'Etudes Commerciales Supérieures, France

Mohammad TARIQ INTEZAR, College of Business Administration Prince Sattam bin Abdul Aziz University (PSAU), Saudi Arabia

Andy ȘTEFĂNESCU, University of Craiova, Romania

Laura UNGUREANU, Spiru Haret University, Romania

Hans-Jürgen WEIßBACH, University of Applied Sciences - Frankfurt am Main, Germany

# JOURNAL

of Applied Economic Sciences

## *Journal of Applied Economic Sciences*

Journal of Applied Economic Sciences is a young economics and interdisciplinary research journal, aimed to publish articles and papers that should contribute to the development of both the theory and practice in the field of Economic Sciences.

The journal seeks to promote the best papers and researches in management, finance, accounting, marketing, informatics, decision/making theory, mathematical modelling, expert systems, decision system support, and knowledge representation. This topic may include the fields indicated above but are not limited to these.

Journal of Applied Economic Sciences be appeals for experienced and junior researchers, who are interested in one or more of the diverse areas covered by the journal. It is currently published quarterly in 2 Issues in Spring (30<sup>th</sup> March), Summer (30<sup>th</sup> June), Fall (30<sup>th</sup> September) and Winter (30<sup>th</sup> December).

Journal of Applied Economic Sciences is indexed in SCOPUS [www.scopus.com](http://www.scopus.com), CEEOL [www.cceol.org](http://www.cceol.org), EBSCO [www.ebsco.com](http://www.ebsco.com), and RePEc [www.repec.org](http://www.repec.org) databases.

The journal will be available on-line and will be also being distributed to several universities, research institutes and libraries in Romania and abroad. To subscribe to this journal and receive the on-line/printed version, please send a request directly to [jaes\\_secretary@yahoo.com](mailto:jaes_secretary@yahoo.com).

# Journal of Applied Economic Sciences

ISSN-L

1843 – 6110

ISSN

2393 – 5162

## Table of Contents



1	<b>Mikhail Yakovlevich VESELOVSKY, Natal'ya Sergeevna KHOROSHAVINA, Olga Anatolevna BANK, Alexander Evgenievich SUGLOBOV, Sergei Aleksandrovich KHMELEV</b> Characteristics of the Innovation Development of Russia's Industrial Enterprises under Conditions of Economic Sanctions	321
2	<b>Iva NEDOMLELOVA, Lucie STAŇKOVÁ, Roman VAVREK</b> Impact of Minimum Wage in V4 Countries	332
3	<b>Vladimir Sergeevich OSIPOV, Olga Alekseevna BYKANOVA, Ravil Gabdullaevich AKHMADEEV, Mikhail Evgenievich KOSOV, Aleksei Valentinovich BOGOVIZ, Vladimir Mihaylovich SMIRNOV</b> External Debt Burden and Its Impact on the Countries' Budgetary Policy	342
4	<b>Tatyana PŁAKSUNOVA, Alla LITVINOVA, Elena LOGINOVA, Evgeniy LITVINOV, Maria PARFENOVA, Natalya TALALAEVA</b> Determinants of Innovational Development of Economy of Modern Russia	356
5	<b>HALIAH, GAGARING, MEDIATY, MUSHAR</b> The Effect of Budgeting Participation, and Slack Budget in Relationship Between Politic, Culture, and Regulation to Financial Performance	374
6	<b>Svetlana N. KUZNETSOVA, Ekaterina P. GARINA, Viktor P. KUZNETSOV, Elena V. ROMANOVSKAYA, Natalia S. ANDRYASHINA</b> Industrial Parks Formation as a Tool for Development of Long-Range Manufacturing Sectors	391
7	<b>Giedre DZEMYDAITE</b> External Influences for Balance of Trade in Small and Open Economies	402
8	<b>Olga Maksimovna TSYBIKDORZHIEVA, Victor Georgievich BELOMESTNOV</b> Analysis of the Impact of Integration Processes on the Formation of Regional Investment Programs	413

9	<b>Hrabrin BACHEV</b> Sustainability of Bulgarian Farming Enterprises during European Union Common Agricultural Policy Implementation	422
10	<b>György KOVÁCS, Sebastian KOT</b> Software Development for Performance Measurement Evaluation of Road Transport Activity	452
11	<b>Irina L. GOLYAND, Kseniya A. MUKHINA, Kirill N. ZAKHARIN, Jriy A. HEGAI</b> Ensuring Sustainable Development of the Regional Passenger Transport Systems on the Basis of Economically Sound Tariffs for Transportation Services. A Case Study of Krasnoyarsk Krai	462
12	<b>Otília ZORKÓCIOVÁ, Lucia ĎURANOVÁ</b> Identification and Analysis the Possible Factors Obstructing a Successful Integration of Turkish Migrants in Germany	472
13	<b>Kizito Uyi EHIGIAMUSOE, Hooi Hooi LEAN</b> Do Stock Markets Complement Banks in Promoting Economic Growth? Evidence from West African Countries	482
14	<b>Olga Aleksandrovna ZHDANOVA, Tatiana Pavlovna MAKSIMOVA, Denis Grigorievich PEREPELITSA</b> Indications of Social Economic Evolution: Environment Markers of Mutual Investment Funds	498
15	<b>NAJMUDIN, Intan SHAFERI, Sugeng WAHYUDI, Harjum MUHARAM</b> Dynamic Bilateral Integration of Stock Markets and Its Driving Factors	506
16	<b>Enock Nyorekwa TWINOBURYO, Nicholas M. ODHIAMBO</b> Monetary Policy and Economic Growth in Kenya: The Role of Money Supply and Interest Rates	523
17	<b>Ekaterina P. GARINA, Viktor P. KUZNETSOV, Dmitry N. LAPAEV, Elena V. ROMANOVSKAYA, Sergey N. YASHIN</b> Formation of the Production System Elements and R&D Product Development Processes in the Early Stages of the Project	538

18	<b>Anel D. YELEUKULOVA, Kasiya A. KIRDASINOVA, Mafura K. UANDYKOVA, Nikolai V. UVITSA, Muratpek V. MUKHAMBEKOV, Venera T. BALGABAYEVA, Aida M. BALKIBAYEVA</b> Innovation Management in the Oil and Gas Industry of the Republic of Kazakhstan	545
19	<b>Aleksandr Mikhailovich BATKOVSKIY, Elena Georgievna SEMENOVA, Valeriy Yaroslavovich TROFIMETS, Elena Nikolaevna TROFIMETS, Alena Vladimirovna FOMINA</b> Statistical Simulation of the Break-Even Point in the Margin Analysis of the Company	558
20	<b>Yana S. MATKOVSKAYA</b> Clusters: Sense of Market Approach to their Formation and Substantiation of Necessity for Development of Mathematical Apparatus for Modeling of their Development	571
21	<b>Snežana Todosijević LAZOVIĆ, Zoran KATANIĆ, Radmilo TODOSIJEVIC</b> Dependency between Scenario Technique and Instruments for Enterprise Management	582
22	<b>Bambang Bemby SOEBYAKTO, Abdul BASHIR</b> The Effect of Short -Term Aggregate Demand in Indonesian Economy: The Era of ASEAN Economic Community	593
23	<b>Gabriela KOL'VEKOVÁ, Daniela PALAŠČÁKOVÁ</b> Calculation of Localization Quotient for Employment in Cities of Slovakia – Prešov and Košice. Principles of Changes in Employment of the Productive People	604
24	<b>Irina Mikhailovna GOLAYDO, Inna Grigorievna PARSHUTINA, Galina Valerievna GUDIMENKO, Alla Leonidovna LAZARENKO, Natalia Vladimirovna SHELEPINA</b> Evaluation, Forecasting and Management of the Investment Potential of the Territory	615
25	<b>Anastasia Grigorevna VASILIEVA, Vasilya Minsalikhovna GAFUROVA, Inessa Valeryevna KASHUBA, Yuliya Leonidovna KIVA-KHAMZINA, Olga Leonidovna NAZAROVA, Larisa Vladimirovna ORINNA</b> Complex Methodical Approach to Assessing the Effectiveness of Managing the Financial Capability of the Russian Federation Subjects	633
26	<b>Divya SHUKLA</b> Pro-active Work Behavior, Professional Commitment and Psychological Well Being. A Mediation of Organizational Culture	643

## Characteristics of the Innovation Development of Russia's Industrial Enterprises under Conditions of Economic Sanctions

Mikhail Yakovlevich VESELOVSKY  
University of Technology<sup>1</sup>, Russia  
[consult46@bk.ru](mailto:consult46@bk.ru)

Natalya Sergeevna KHOROSHAVINA  
University of Technology, Russia  
[nataxoroshavina@mail.ru](mailto:nataxoroshavina@mail.ru)

Olga Anatolevna BANK  
University of Technology, Russia  
[olgha-2000@mail.ru](mailto:olgha-2000@mail.ru)

Alexander Evgenievich SUGLOBOV  
Financial University under the Government of the Russian Federation<sup>2</sup>, Russia  
[a\\_suglobov@mail.ru](mailto:a_suglobov@mail.ru)

Sergei Aleksandrovich KHMELEV  
Russian Customs Academy<sup>3</sup>, Russia  
[hmelev.s.a@mail.ru](mailto:hmelev.s.a@mail.ru)

### Suggested Citation:

Veselovsky, M.Y., Khoroshavina, N.S., Bank, O.A., Suglobov, A.E., Khmelev, S.A., 2017. Characteristics of the innovation development of Russia's industrial enterprises under conditions of economic sanctions. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 321 – 331.

### Abstract

The present-day conditions of global economic development are such that there is a need to activate the innovation component in a national economy. A nation will be able to compete in the global market only if it has reached a high level of innovation development and employs the latest cutting-edge technology. In this regard, Russia, despite its vast scientific potential, has yet to make its presence felt in the market for high-tech products. Compared with developed countries, characterized by fairly high levels of innovation activity in industry, the share of Russian industrial enterprises engaged in the development of innovations is not very big, no more than 10%, with the combined volume of domestic innovative products currently checking in at 585 billion rubles (around \$9.5 billion, as of December 21, 2016). The innovation development of Russia's industry has been affected by the economic sanctions imposed on the nation in recent years. When these sanctions were imposed, the Russian government had to take immediate measures, one such measure being the active pursuit of import substitution policies, including in the innovation sphere. That being said, since then there have been a number of challenges impeding innovation development in Russian industry. This paper explores the impact the sanctions have had in relation to the innovation development of Russia's industrial enterprises, identifies some of the major issues in this respect, and brings forward special mechanisms expected to help remediate these issues.

**Keywords:** innovations; innovation activity, innovation development, innovation activity of enterprises, industry

**JEL Classification:** E20; E22

### Introduction

Amid stiffening competition in the global market on the one hand and as a result of the imposition of sanctions on Russia on the other, the nation has been faced with a number of issues resolving which may prove particularly

---

<sup>1</sup> 141070, Russia, Korolev, Gagarin St., 42

<sup>2</sup> 125993, Russia, Moscow, Leningradsky Ave., 49

<sup>3</sup> 140009, Russia, Lyubertsy, Komsomolsky Ave., 4



crucial to its sustainable economic development going forward. In this regard, a crucial area for bolstering the Russian economy is boosting its innovation component, which is directly linked to boosts in the innovation activity of Russian enterprises and gains in their competitiveness in the global market.

That said, for the time being the Russian high-tech sector has yet to make its presence felt in the global market. Over the last few years, its share in the overall volume of the nation's industrial production has declined significantly, which has led to sharp drops in growth rates within the innovation-driven sectors of the economy. In the global market, Russia's high-tech output remains insufficiently competitive, its share accounting for just 0.5% of the overall volume of high-tech products turned out globally (Glisin 2015).

In Russia's industry, the innovation component is currently prevailing in such sectors as the chemical and food industries, mechanical engineering, and metallurgy. Innovatively active enterprises operating in these sectors account for more than 70% of the overall number of innovative enterprises across Russia. The nation's technological exchange processes have been distinguished by a lack of internal impelling motivation for innovation. All this has reflected on the innovation development of the Russian economy as a whole.

## Conclusion

To be able to fully integrate into the global scientific-technical process, Russia needs a shift to an innovation economy. An innovation economy is predicated on knowledge, innovation, being open and receptive to novel ideas, and being keen on implementing novel ideas in practice. It is innovation activity that is expected to be the basis for economic growth in Russia and enable the nation to compete globally via its high technology. For the time being, Russian industrial enterprises engaged in innovation activity have been increasingly faced with a variety of issues, whose impact has been felt especially acutely in a climate of economic sanctions and countersanctions introduced as a counter measure. Among the major issues impeding innovation development in Russian industry at the moment are a lack of funding for innovative solutions, poor company staffing, a lack of efficient infrastructure capable of helping an innovation reach the serial production stage, the inefficient interaction of business and science, and others. The mechanisms proposed by the authors in this paper may help impel the innovation activity of Russia's industrial enterprises, which is taking on added significance in the current climate of sanctions restrictions.

## References

- [1] Devyatkin, A. G. 2015. Osnovnye problemy, prepyatstvuyushchie innovatsionnoi deyatel'nosti na predpriyatiyakh promyshlennosti [Major issues hindering innovation activity in industrial enterprises]. *Naukovedenie*, 7(5). Available at: <http://naukovedenie.ru/PDF/82EVN515.pdf> (accessed November 1, 2016)
- [2] Dorozhkina, O. K., Dorozhkin, I. N., and Shinkevich, I. A. 2015. Problemy kommersializatsii innovatsii na promyshlennykh predpriyatiyakh [Issues in the commercialization of innovations in industrial enterprises]. *Sborniki Konferentsii NITs Sotsiosfera*, 32: 60–61.
- [3] Duka, A. 2012. Potential of saving and its resource forming in providing of economy innovative development. *Vestnik Kievskogo Natsional'nogo Universiteta Imeni Tarasa Shevchenko. Ekonomika*, 136: 16–19.
- [4] Faury, T. P., and de Carvalho, M. M. 2013. Corporate venture capital: Geração e acompanhamento de oportunidades de investimento em empresas inovadoras [Corporate venture capital: Originating and monitoring investment opportunities in innovative companies]. *Production*, 23(4): 735–750.
- [5] Glisin, F.F. 2015. Nekotorye tendentsii razvitiya innovatsionnoi deyatel'nosti v Rossii v usloviyakh ogranicheniya finansovykh resursov [Some trends in the development of innovative activity in Russia under conditions of financial resource restrictions]. *Innovatika i Ekspertiza*, 1(14): 50–57.
- [6] Gracheva, N. V. 2011. Problemy povysheniya innovatsionnoi aktivnosti promyshlennykh predpriyatii i puti ikh resheniya v sovremennykh usloviyakh [Issues in boosting the innovation activity of industrial enterprises and ways to resolve them under present-day conditions]. *Vestnik Bryanskogo Gosudarstvennogo Universiteta*, 3. Available at: <http://cyberleninka.ru/article/n/problemy-povysheniya-innovatsionnoy-aktivnosti-promyshlennyh-predpriyatii-i-puti-ih-resheniya-v-sovremennykh-usloviyah> (accessed November 1, 2016).
- [7] Krupina, N. N., and Kipriyanova, E. N. 2014. The innovative approach to management of development of territory barrier industrial enterprises. *Austrian Journal of Humanities and Social Sciences*, 7–8. Available at: <http://cyberleninka.ru/article/n/the-innovative-approach-to-management-of-development-of-territory-barrier-industrial-enterprises> (accessed November 1, 2016).
- [8] Kutsenko, E. 2015. Pilot innovative territorial clusters in Russia: A sustainable development model. *Foresight-Russia*, 9(1): 32–55.
- [9] Loukil, K. 2016. Foreign direct investment and technological innovation in developing countries. *Oradea Journal of Business and Economics*, 1(2), 31–40.

- [10] Mamleeva, E. R. 2016. Gosudarstvennoe regulirovanie innovatsionnoi deyatel'nosti [Government regulation of innovation activity]. *Naukovedenie*, 8(3). Available at: <http://naukovedenie.ru/PDF/30EVN316.pdf> (accessed November 1, 2016)
- [11] Neville, K., and Adam, F. 2003 Integrating theory and practice in education with business games. *Informing Science*, 6: 661–673.
- [12] Obradovic, D., and Obradovic, D. 2016. The role innovation on strategic orientations and competitiveness of enterprises. *Ecoforum*, 5(1): 90–95.
- [13] Polyakov, R. K., Balyasnikova, E. V., and Chumakov, A. S. 2016. Sektoral'nye sanktsii: Kurs na importozameshchenie i razvitie innovatsii v Rossiiskoi Federatsii [Sectoral sanctions: Setting a course for import substitution and the development of innovation in Russian Federation]. *Vestnik MGTU*, 19(2): 502–511.
- [14] Timotin, L. 2016. Institutions of support for innovative production enterprises. *Economica*, 1: 18–27.
- [15] Veselovsky, M. Y., Suglobov, A. E., Khoroshavina, N. S., Abrashkin, M. S., and Stepanov, A. A. 2015. Business angel investment in Russia: Problems and prospects. *International Journal of Economics and Financial Issues*, 5(3S): 231–237.
- [16] Vyzhigin, A. 2016. University STAFF: Motivation of innovative activities. *SHS Web of Conferences*, 29. Available at: [http://www.shs-conferences.org/articles/shsconf/pdf/2016/07/shsconf\\_eeia2016\\_02045.pdf](http://www.shs-conferences.org/articles/shsconf/pdf/2016/07/shsconf_eeia2016_02045.pdf) (accessed November 1, 2016).
- \*\*\* Federal State Statistics Service of the Russian Federation. (2015). *Rossiiskii statisticheskii ezhegodnik-2015* [The annual statistical abstract of the Russian Federation] (p. 728). (in Russian). Available from [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/publications/catalog/doc\\_1135087342078](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/publications/catalog/doc_1135087342078)
- \*\*\* Ministry of Economic Development of the Russian Federation. (2015). *Natsional'nyi doklad ob innovatsiyakh v Rossii 2015* [The 2015 National Report on Innovation in Russia]. Available at: [https://www.rvc.ru/upload/iblock/b70/NROI\\_RVC.pdf](https://www.rvc.ru/upload/iblock/b70/NROI_RVC.pdf) (accessed November 1, 2016).
- \*\*\* Ministry of Economic Development of the Russian Federation. (2016, January 13). *Publichnoe obsuzhdenie natsional'nogo doklada ob innovatsiyakh v Rossii* [A public discussion on the National Report on Innovation in Russia]. Available at: <https://www.rvc.ru/upload/iblock/fea/Gaidar.pdf> (accessed November 1, 2016).
- \*\*\* *Venchurnyi rynek Rossiiskoi Federatsii: Itogi 2015 goda* [The venture capital market of the Russian Federation: The 2015 results]. (2016, March 31). Available at: [http://json.tv/ict\\_telecom\\_analytics\\_view/venchurnyy-rynok-rossiyskoy-federatsii-itogi-2015-goda-20160331021111](http://json.tv/ict_telecom_analytics_view/venchurnyy-rynok-rossiyskoy-federatsii-itogi-2015-goda-20160331021111) (accessed November 1, 2016).

## Impact of Minimum Wage in V4 Countries

Iva NEDOMLELOVÁ

Department of Economics, Faculty of Economics  
Technical university of Liberec<sup>4</sup>, Czech Republic  
[iva.nedomlelova@tul.cz](mailto:iva.nedomlelova@tul.cz)

Lucie STAŇKOVÁ

Department of Economics, Faculty of Economics  
Technical university of Liberec, Czech Republic  
[lucie.stankova1@tul.cz](mailto:lucie.stankova1@tul.cz)

Roman VAVREK

Department of Management  
Faculty of Management<sup>5</sup>, Prešov, Slovakia  
[roman.vavrek@unipo.sk](mailto:roman.vavrek@unipo.sk)

### Suggested Citation:

Nedomlelová, I., Staňková, L., Vavrek, R. 2017. Impact of minimum wage in V4 countries. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 332 – 341.

### Abstract:

The labour market is one of the most regulated markets. Two approaches to labour market regulation are usually described in economic literature. One approach sees regulation as a necessity for the social protection of labour and as a tool leading to productivity growth (institutionalists). The other one (distortionist) considers regulation as an impediment to the adjustment mechanism of the labour market. The aim of this paper is to present different views on the minimum wage institution in economic theories. The main objective is however to verify three hypotheses in V4 countries which confirmation or refutation are verified by simple regression analysis. Results of the analysis confirm that an increase in minimum wage causes an increase in employment rate and unemployment rate, but only for Poland. The third hypothesis (an increase in minimum wage causes an increase in GDP) is refuted for all V4 countries.

**Keywords:** visegrad countries; minimum wage; labour market; regression analysis

**JEL Classification:** F16; E24; J31; C51.

### Introduction

In terms of economic theory, an economy needs an overall macroeconomic balance. The labour market is an important part of a market economy and is in mutual interaction with other markets. The price of labour – wage – affects the overall costs of production, production volumes and hence the overall price level. It also determines the purchasing power of wage earners and thus affects demand for production. The area of the labour market and associated employment is thus a key condition for macroeconomic performance. However, reaching a balance in real-world labour markets is made difficult or even impossible by a number of obstacles arising from this market's significant specifics. Such obstacles include, in particular, the heterogeneity and imperfect/limited mobility of labour, the existence and activity of trade unions, the minimum wage institution, employees' statutory protection against layoff and a number of other interventions.

The objective is to verify three significant hypotheses in the countries of the Visegrad Group (V4):

H1: A rise in the minimum wage results in a rise in the employment rate;

H2: A rise in the minimum wage results in a rise in the unemployment rate;

---

<sup>4</sup> Institutional postal address: Studentská 2, 461 17 Liberec; Voroněžská 13, 460 01 Liberec, Czech Republic

<sup>5</sup> Konštantínova 16, 080 01 Prešov, Slovakia

H3: A rise in the minimum wage results in a rise in GDP. For confirmation, or refutation of the defined hypotheses, simple regressive analysis was done.

At present, the minimum wage is stipulated by law in most of the member states of the European Union (EU) including the Czech Republic, Slovakia, Poland and Hungary (specifically in 22 out of the 28 EU States). However, there are still conflicting opinions on the significance, effects and economic and social functions of the minimum wage.

## Conclusion

The main objective of the research was to verify three significant hypotheses in the countries of the Visegrad Group (V4): 1. A rise in the minimum wage results in a rise in the employment rate; 2. A rise in the minimum wage results in a rise in the unemployment rate; 3. A rise in the minimum wage results in a rise in GDP. For confirmation, or refutation of the defined hypotheses, linear regressive analysis was done. At the confidence level of 5%, the conclusions that a rise in the minimum wage results in a rise in the employment rate and rise in unemployment rate, were confirmed only for the territory of Poland. For the rest of the V4 countries, it was necessary to reject these hypotheses. The third hypothesis could not be verified for any of the V4 countries. In all cases, the statistically insignificant values were at the given confidence level of 5%.

The partial target of the treatise was to discuss the positive and negative approaches to the institution of the minimum wage in economic theory and present the conclusions of some Czech and world empirical researches. Interest in this issue is relatively high in literature and continues to grow because the statutory minimum wage is one of the strongest, and also perhaps, most intensively discussed modes of intervention in the market mechanism. Both theoretical economists and authors of empirical studies arrive at substantially different conclusions regarding the impact of the minimum wage on the labour market, or on other macro-economic variables. And this is just the reason why further research activities should be devoted to these problems.

## Acknowledgement

This article was created as a research project at the Faculty of Economics, Technical University of Liberec, years 2014-2016 funded from institutional support for long-term strategic development research organizations.

This work was also supported by the Cultural and Educational Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic (Project KEGA No. 035PU-4/2016, Project KEGA No. 032PU-4/2014) and by the Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic and the Slovak Academy of Sciences (Project VEGA No. 1/0139/16).

## References

- [1] Aaronson, D., and French, E. 2007. Product Market Evidence on the Employment Effects of the Minimum Wage. *Journal of Labor Economic*, 25(1): 167–200.
- [2] Ashenfelter, O. C., Card, D. 1999. *Handbook of Labor Economics*. Volume 3A. 1<sup>st</sup> Edition. North Holland. 930p.
- [3] Barošová, M. 2007. *Minimálna mzda a rodové mzdové rozdiely. Rozhovory o sociálnej politike*. Bratislava:
- [4] Baštýř, I. 2005. *Vybrané aktuální problémy uplatňování minimální mzdy v ČR*. Prague: VÚPSV. Available at: <http://praha.vupsv.cz>
- [5] Card, D., Krueger, A. B. 1995. *Myth and measurement: the new economics of the minimum wage*. Princeton University Press. ISBN: 9780691048239
- [6] Fialová, K. and Mysíková M. (2009). The Minimum Wage: Labour Market Consequences in the Czech Republic. *Finance a úvěr – Czech Journal of Economics and Finance*, 59(3): 255-274.
- [7] Fischer, J., Duspivová, K., Matějka, M. 2015. *Vliv minimální mzdy na zaměstnanost v České republice*. Ekonomická studie pro ASO. Vysoká škola ekonomická v Praze. Available at: <https://www.vlada.cz/assets/media-centrum/aktualne/VLIV-MINIMALNI-MZDY-NA-NEZAMESTNANOST-V-CR.pdf>
- [8] Fric, K. 2016. *Statutory minimum wages in the EU 2016*. Ireland: Eurofound. Available at: <http://www.eurofound.europa.eu/observatories/eurwork/articles/working-conditions-industrial-relations/statutory-minimum-wages-in-the-eu-2016>
- [9] Friedman, M. 1962. *Capitalism and Freedom*. Chicago. The University of Chicago Press. 40 Anv edition.
- [10] Gottwald, J., Hančlová, J., and Pytlíková, M. 2002. *Minimum Wage and Its Impact on Wage Distribution, Unemployment and Hours Worked*. GOTTWALD, J., et al. Determinants of individual pay and firms pay structures in the Czech Republics. Ostrava: VB-TU Ostrava.

- [11] Leonard, T. C. 2003. More Merciful and Not Less Effective: Eugenics and American Economics in the Progressive Era. *History of Political Economy*, 35(4): 687-712.
- [12] Lester, R. A. 1964. *The Economics of Labor*. New York: Macmillan. OCLC Number 1344664
- [13] Levin-Waldman, O. M. 2001. *The case of the minimum wage: competing policy models*. New York: State University of New York Press. ISBN: 079144855X, 9780791448557
- [14] Neumark, D., and Waacher, W. 1994. Employment Effects of Minimum and Subminimum Wages: Reply to Card, Katz and Krueger. *Industrial and Labor Relations Review*, 47(3): 497–512.
- [15] Neumark, D., and Waacher, W. 2000. Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Comment. *The American Economic Review*, 90(5): 1362–1396.
- [16] Neumark, D., and Waacher, W. 2007. *Minimum wages, the earned income tax credit, and employment: evidence from the post-welfare reform era*. [NBER Working Paper, no. 12915], NBER (February).
- [17] Pavelka, T., Skála, M., and Čadil, J. 2014. Selected Issues of the Minimum Wage in the Czech Republic, *Ekonomie a management*, 17(4): 30-45.
- [18] Rothbard, M. N. 2001. *Ekonomie státních zásahů*. Praha: Liberální institut. ISBN: 80-86389-10-3
- [19] Shapiro, C., and Stiglitz, J. E. 1984. Equilibrium Unemployment as a Worker Discipline Device. *The American Economic Review*, 74(3): 433–444.
- [20] Sunstein, C. R. 1997. *Free markets and social justice*. New York, NY [US]: Oxford University Press.
- \*\*\* Eurostat (2016). *Eurostat: Minimum wages*. Luxembourg: Eurostat, Available at: <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=tps00155>
- \*\*\* Inštitút pre výskum práce a rodiny, 29. 5. 2007. Available at: [http://www.ceit.sk/IVPR/index.php?option=com\\_content&view=article&id=86&Itemid=6&lang=sk](http://www.ceit.sk/IVPR/index.php?option=com_content&view=article&id=86&Itemid=6&lang=sk)
- \*\*\* ILO. 1992. *Minimum wages: wage-fixing, application and supervision*. Report III (Part 4B). Geneva: International Labour Conference. Available at: [http://www.ilo.org/wcmsp5/groups/public/ed\\_norm/relconf/documents/meetingdocument/wcms\\_235287.pdf](http://www.ilo.org/wcmsp5/groups/public/ed_norm/relconf/documents/meetingdocument/wcms_235287.pdf)
- \*\*\* OECD. (2016). *OECD Statistics*. France: Organization for Economic Co-operation and Development.

## External Debt Burden and Its Impact on the Countries' Budgetary Policy

Vladimir Sergeevich OSIPOV  
Institute of Economics of Russian Accounting Standards  
The Federal Research Institute of System Analysis of the Accounts Chamber of the Russian Federation  
[vs.ossipov@gmail.com](mailto:vs.ossipov@gmail.com)

Olga Alekseevna BYKANOVA  
Plekhanov Russian University of Economics  
[bykanova@inbox.ru](mailto:bykanova@inbox.ru)

Ravil Gabdullaevich AKHMADEEV\*  
Plekhanov Russian University of Economics  
[ahm\\_rav@mail.ru](mailto:ahm_rav@mail.ru)

Mikhail Evgenievich KOSOV  
Plekhanov Russian University of Economics, Financial University under the Government of the Russian Federation  
[kosovme@mail.ru](mailto:kosovme@mail.ru)

Aleksei Valentinovich BOGOVIZ  
The Federal Research Institute of System Analysis of the Accounts Chamber of the Russian Federation  
[aleksei.bogoviz@gmail.com](mailto:aleksei.bogoviz@gmail.com)

Vladimir Mihaylovich SMIRNOV  
Financial University under the Government of the Russian Federation  
[smirnovV1@yandex.ru](mailto:smirnovV1@yandex.ru)

### Suggested Citation:

Osipov, V.S., Bykanova, O.A., Akhmadeev, R.G., Kosov, M.E., Bogoviz, A.V., Smirnov, V.M. 2017. External debt burden and its impact on the countries' budgetary policy. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 342 – 355.

### Abstract:

The impact of the global world economy increases the relevance and significance of the debt policy, contributing to consolidation of the state guarantees for the national economy. The internal and external policy implemented by the state and failing to provide the balance of budget revenue and expenditure is a cause of the national debt. Alongside with that, it is impossible to identify any specific country which would not have faced such a problem in any of the periods in its history. The correlation analysis employed in studying the composition and structure of the external debt of the world countries' leading economies enabled to characterize and prove most likely the assumption of export growth depending on the increase in the external debt in the analyzed subjects, and the extent of impact on the growth of the corporate sector activity before everything else. At the same time the study revealed the negative trends of increasing the national debt ratios in comparison to the corporate one when producing medium-term forecasts for an individual country of the world. This, in turn, allowed formulating the main directions for the identification of further reserves in improving efficiency of the state' external debt management.

**Keywords:** national debt; budgetary policy; taxation, financial system of the state; macroeconomics; corporate sector of the economy

**JEL Classification:** B40 ; C53 ; E17 ; F34

### Introduction

Economic globalization has qualitatively changed the market and considerably lowered the opportunities of state protectionism in relation thereto. In this regard, the concept of 'external national debt' becomes ambiguous. The global economy in its current state has increased the relevance of debt policy causing concerns of various states about the uncontrollable tendency of growth of all types of debts, both internal and external, including at the



level of country, corporate sector and debts in the consumer credit market. Therefore, it is necessary to create the conditions for ensuring the necessary level of state guarantees for the national economy, as there is no guarantor of global governance in the national debt management. In the process of the global governance system building it is necessary to introduce a transitional control by the state, consistent with the new conditions of a significant reduction in state protectionism opportunities in relation to the market. Against this background, in the conditions of the world economy globalization and development of international economic relations the importance of external national debt is increasing. The global economy increases the debt policy relevance and contributes to the necessary consolidation of government guarantees for the national economy, very understanding of external national debt changes which cannot be considered as it was considered at the time of the protectionist policy of the state when all types of debts, including external national debt as well, were not significant. In the current period of the debt economy of most countries of the world all kinds of debt are essential and the state of external national debt shows the acuteness of the problem.

## Conclusion

The world countries' debt management is based, as a rule, on a large stock of produced capital, developed a system of economic and financial market. The biggest industrialized countries are both major lenders and borrowers in the global economy. Moreover, the nature and specifics of external indebtedness management in these countries is based on the following provision. National debt is fully securitized, *i.e.*, there are no loans received from other creditors, including international financial organizations (the case in developing countries), in its structure. National debt of the developed countries is actually a portfolio of issued and serviced debt securities with varying maturities, available to both residents and non-residents. In turn it is applicable to a wider range of operations carried out according to the specific objectives, taking into account the current market situation. In this regard, the nature of external debt management for the developed countries is a tool for regulating the emission of debt securities which provides budgetary financing needs with cheaper means in the long term and the implementation of targets in relation to the degree of risk and cost. Mechanisms of restructuring indebtedness due to the virtual absence of defaults on government obligations do not apply, with the exception of early redemption of debt through the purchase of securities in the open market.

Activity of organizational and legal structures for the management of external indebtedness is carried out in distinct coordination with fiscal and monetary management. In particular, to overcome the negative effects of the global financial crisis in the US in 2009 separate Recovery and Reinvestment Act was adopted, binding the creation or saving millions of jobs, the modernization of national infrastructure and development of human capital. In 2009 the Federal Reserve announced an additional infusion of more than a trillion dollars into the economy, having bought long-term government bonds worth up to 300 billion dollars within half a year and allocating additional USD 750 billion for the purchase of securities backed by a pool of mortgage loans, taking into account debt securities mortgage agencies in the amount of more than USD 200 bln. (Abdulgalimov 2016). At the same time to finance the gigantic increase in government spending the US was forced to make unprecedented debts, which rose from 40% to 60% of GDP within 1 year and in 10 years could reach 100% GDP (Buti and Giudice 2002). Germany approved a plan of socio-economic activities in the context of the global financial crisis which also took over the largest debt in the history of Germany existence. At the same time, according to experts, the national governments issued bonds in the amount of more than USD 11.69 trillion for implementing packages of measures to stimulate their economies and rescue the banking system (Kosov 2016). It should be noted that additional measures in the securities market may be a reserve for increased efficiency in the management of external national debt in the developed countries. This implies the introduction of new instruments in the relevant market, in view of the new securities trading systems and market infrastructure organization. In particular, the creation of the Eurozone government bond market is a promising tool for the securities market in the European Union (EU), which is able to complement the existing government bond markets of each of the states, not replacing them. As a result, it is possible to form a single backed up financial system in the EU, which system is characterized currently by significant structural weaknesses: there is a central bank for the common currency but no central treasury, and control over the banking system is the responsibility of individual countries (Hemming 2003). However, the Eurozone bonds can be used to assist States candidates for accession to the EU, serve to improve the EU's lending capacity beyond the current mandates of the European Investment Bank and the European Bank for Reconstruction and Development. In this case, a single concept is able to finance investment programs that combine countercyclical function with such important European objectives as the creation of the unified energy system, a network of gas and oil pipelines, investment in alternative sources of energy, etc. This will require solving the problems of debt burden distribution among member states and the voting rights of various financial ministers of the Eurozone countries in decision-making.

Another promising way to increase the efficiency of managing the external national indebtedness is to introduce new trading systems based on the use of modern means of IT communication, enabling to implement it in fully automated management without intermediaries and direct contacts between sellers and buyers, taking into account the implementation of the new market infrastructure in the form of IT clearing and settlement system of custody servicing in the securities market.

Consequently, further improvement of the quantitative risk assessment methods based on the achievements of economic science and mathematical knowledge is the more relevant reserve to increase efficiency of the state's external debt management.

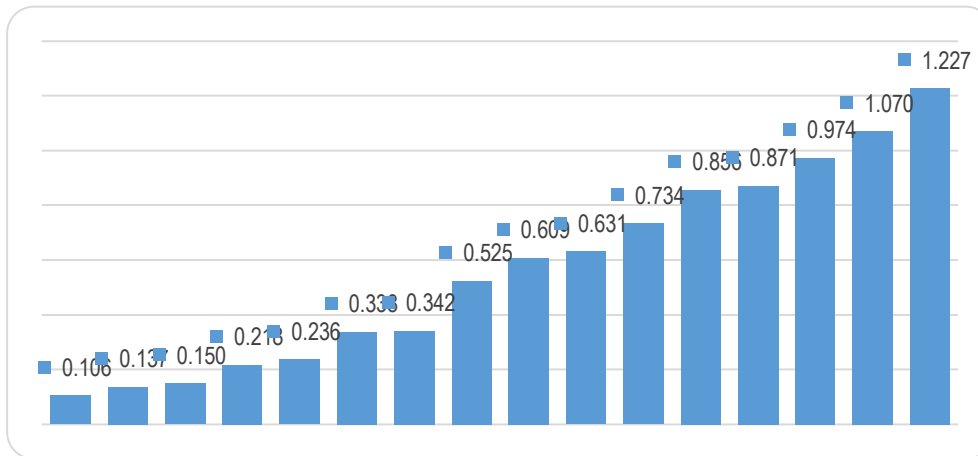
## References

- [1] Aart, K., and Vikram, Nehru V. 2004. *When is Debt Sustainable*. World Bank Policy Research Working Paper No. 3200, Washington, D.C. Available at: <http://www.nber.org/chapters/c0380>
- [2] Abdulgaliimov, A. M. *et al.* 2016. Mechanism development for corporate income taxation in Russia. *Indian Journal of Science and Technology*. 9(40). DOI: 10.17485/ijst/2016/v9i40/100279
- [3] Akhmadeev, R. G. *et al.* 2016. Impact of tax burden on the country's investments. *Journal of Applied Economic Sciences*. 11(5): 992-1002.
- [4] Barro, R. J. 1991. Economic Growth in a Cross Section of Country. *Quarterly Journal of Economics*, 106(2): 407- 443.
- [5] Buti, M., and Giudice, G. 2002. Maastricht Fiscal Rules at Ten. An Assessment II *Journal of Common Market Studies*, 40(5): 823-848. DOI: 10.1111/1468-5965.00399
- [6] Chadha, B., and Coricelli, F. 1997. Fiscal constraints and the speed of transition. *The Journal of Development Economics*, 52(1): 221-249. DOI: [10.1016/S0304-3878\(96\)00433-6](https://doi.org/10.1016/S0304-3878(96)00433-6)
- [7] Debrun, X., Epstein, N., and Symansky, S. 2008. *A New Fiscal Rule: Should Israel "Go Swiss"?* International Monetary Fund. WP/08/87. Available at: <https://www.imf.org/external/pubs/ft/wp/2008/wp0887.pdf>
- [8] Elmendorf, D. W., and Mankiw, N. G. 1999. National debt. In Taylor, J.B. and Woodford, M. (Eds.). *Handbook of macroeconomics*. Amsterdam, North-Holland: Elsevier Science B.V. 1: 1615 - 1669.
- [9] Hemming, R., Kell, M., and Schimmelpfennig, A. 2003. *Fiscal vulnerability and financial crises in emerging market economies*. Washington, DC: International Monetary Fund. 218. ISBN: 978-1-58906-196-5 / 0251-6365
- [10] Keen, S. 1995. Finance and Economic Breakdown: Modeling Minsky's Financial Instability Hypothesis. *Journal of Post Keynesian Economics*, 17 (4): 607-635: Available at: <http://www.jstor.org/stable/4538470>
- [11] Kell, M. 2001. *An Assessment of Fiscal Rules in the United Kingdom*. Washington: IMF. Available at: <https://www.imf.org/external/pubs/ft/wp/2001/wp0191.pdf>
- [12] Keynes, J. M. 1937. The General Theory of Employment. *The Quarterly Journal of Economics*, 51(2): 209-223. Available at: <http://public.econ.duke.edu/~erw/190/KeynesQJE.pdf>
- [13] Kopits, G., Himenez, J. P., and Manoel A. 2000. Responsabilidad Fiscal a Nivel Subnacional: Argentina y Brasil. XII Seminario Regional de Política Fiscal. *Compendio de Documentos*, Santiago, UNECLAC, (January 24-26): 25-57.
- [14] Kosov, M. E., Akhmadeev, R. G., Osipov, V. S., Kharakoz, Yu. K., Smotritskaya, I. I. 2016. Socio-economic planning of the economy. *Indian Journal of Science and Technology*. 9(36). DOI:[10.17485/ijst/2016/v9i36/102008](https://doi.org/10.17485/ijst/2016/v9i36/102008)
- [15] Mankiw, N. G. 2000. The Savers-Spenders Theory of Fiscal Policy. *American Economic Review*, 90(2): 120-125. DOI: 10.1257/aer.90.2.120
- [16] O'Donnell, C., and Westhuizen, G. 2002. Regional comparisons of banking performance in South Africa. *South Afr. J. Econom.*, 70: 224-240. DOI: 10.1111/j.1813-6982.2002.tb01301.x
- [17] Osipov, V., Skryl, T., Nevskaya, N., Shavina, E. 2016. The Territories of the Priority Development: Genesis of the Institutes. *International Business Management*, 10(9): 1649-1657. DOI: 10.3923/ibm.2016.1649.1657

- [18] Reinhart, C. M., and Kenneth S. R. 2004. Serial Default and the "Paradox" of Rich-to-Poor Capital Flows. *American Economic Review*, 94(2): 53-58. DOI: 10.1257/0002828041302370.
- [19] Samuelson, P. A. 1958. An Exact Consumption-Loan Model of Interest with or without the Social Contrivance of Money. *Journal of Political Economy*, 66(6): 467—482.

**Annex 1**

Average values of the world countries' distribution according to the share of national debt volume with regard to the corporate debt over the period from July 01, 2013 through July 01, 2016.



**Annex 2**

The basic data elements in conducting country-based analysis of variance

Country	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Russia	-0.076903524	0.054140840	-1.420434640	0.39051	-0.764828119	0.61102107
	1.468169687	0.385698392	3.806522707	0.163549	-3.432593048	6.368932423
USA	0.568455731	0.302617070	1.878465515	0.311429	-3.276658722	4.413570184
	-0.647395551	0.411964979	-1.571482000	0.360781	-5.881906923	4.58711582
Japan	0.541929252	0.177143668	3.059264031	0.201126	-1.708894461	2.792752964
	-0.767810525	0.342707180	-2.240427310	0.267259	-5.122318114	3.586697064
Germany	-0.027308591	1.699345341	-0.01607007	0.98977	-21.61953841	21.56492123
	0.471683063	1.954954905	0.241275674	0.84928	-24.36837421	25.31174034
United Kingdom	0.311427794	0.022189091	14.03517616	0.045282	0.029488667	0.593366921
	-1.294390488	0.217338655	-5.95563863	0.105906	-4.055939933	1.467158956
France	0.353997020	0.855295820	0.413888402	0.750177	-10.51356678	11.22156082
	-0.229886444	1.402100432	-0.16395861	0.896541	-18.04526159	17.58548871
India	-0.059411097	0.232415146	-0.25562489	0.840676	-3.012525528	2.893703334
	0.435777369	0.990972588	0.439747148	0.736252	-12.15572322	13.02727795
Italy	0.356454972	0.174149101	2.046837853	0.289313	-1.85631916	2.569229104
	-0.109246026	0.146345099	-0.74649596	0.591765	-1.968736819	1.750244767
Brazil	0.081903431	0.010256972	7.985146953	0.079313	-0.048423759	0.212230622
	-0.024801962	0.016601824	-1.49392991	0.375526	-0.235748139	0.186144216
Canada	0.196548394	0.057552633	3.415106893	0.05012	-0.534727146	0.927823934
	0.260389805	0.160496817	1.622398561	0.35165	-1.778915612	2.299695223
The Republic of Korea	-0.933583092	3.992388117	-0.23384077	0.85376	-51.66168389	49.79451771
	3.788635820	11.78003107	0.321615096	0.801905	-145.8908508	153.4681224
Spain	0.308280458	0.042784753	7.205381215	0.087793	-0.235351378	0.851912295
	-0.125164672	0.046180165	-2.71035565	0.22502	-0.71193931	0.461609965
Mexico	0.255316017	0.066623592	3.832216347	0.162499	-0.591216978	1.101849011
	-0.059176281	0.059876588	-0.98830416	0.503745	-0.819980464	0.701627903
Indonesia	-0.128914459	0.065666704	-1.96316324	0.299927	-0.963289041	0.705460123
	0.228068529	0.077632567	2.937794518	0.208868	-0.758346758	1.214483815

## Determinants of Innovational Development of Economy of Modern Russia

Tatyana PLAKSUNOVA  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[plaksunova@vgi.volsu.ru](mailto:plaksunova@vgi.volsu.ru)

Alla LITVINOVA  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[litvinova\\_av@mail.ru](mailto:litvinova_av@mail.ru)

Elena LOGINOVA  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[loginov1466@mail.ru](mailto:loginov1466@mail.ru)

Evgeniy LITVINOV  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[polaris\\_ltd@mail.ru](mailto:polaris_ltd@mail.ru)

Maria PARFENOVA  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[pvv\\_65@mail.ru](mailto:pvv_65@mail.ru)

Natalya TALALAEVA  
Volzhsky Humanitarian Institute (Branch)  
Volgograd State University, Volgograd, Russia  
[talalaeva\\_ns@mail.ru](mailto:talalaeva_ns@mail.ru)

### Suggested Citation:

Plaksunova, T., Litvinova, A., Loginova, E., Litvinov, E., Parfenova, M., Talalaeva, N. 2017. Determinants of innovational development of economy of modern Russia. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 356 – 373.

### Abstract:

Aggravation of crisis phenomena in economy of modern Russia caused the necessity for preparation of the model of development, the realization of which will allow using the existing innovational potential. In order to find determinants of innovational development, the matrix approach to study of innovational system by criteria of innovative activities of economic spheres was used, which allowed making a conclusion regarding its binary structure (spheres-innovators and spheres-conservatives). Based on this, a model of economic growth was developed which allowed determining structural proportions in distribution of gross national product, necessary for achievement of goals of innovational development of economy.

Ensuring the implementation of the innovative model of economic growth, the state develops and applies a variety of tools to stimulate innovators, the use of which in the conditions of limited budget resources should be based on reliable and valid assessment of the effectiveness of incentives based on costs obtained in the course of their implementation results. The method of quantitative estimation of efficiency of the state stimulus of innovative activity allows identifying the effectiveness of incentives and measures aimed at redistribution of budget funds in favor of high-performance tools.

**Keywords:** innovational matrices; determinants of innovational development; innovational activity of economic spheres; binary model of economic growth; state stimulation of innovational activities; stimulation tools; effectiveness of stimulation.

**JEL Classification:** O3.

## Introduction

Results of socio-economic development of Russia in 1990's and 2000's set before the state and society the task of provision of quick economic growth which is possible on the basis of systemic modernization, supposing formation of technical and technological basis that is adequate to the sixth technological mode in the globalizing society, creation of institutional system which stimulates the growth of economy, and establishment of civil society which is a social foundation for effective execution by the state of its function as a guarantor of socio-economic and political stability. Solving these three tasks of modernization of Russian economy and society requires development of theoretical model of modernization, practical realization of which will allow Russia not only to overcome the systemic crisis but will provide a decent place in the global economic space.

During formation of the model of modernization of Russian economy, it is necessary to take into account the following conditions:

- the process of modernization in Russia should be performed on the basis of “post-communist transformation” (T.I. Zaslavskaya), which took place in 1990's and led to the crisis of science and education, “brain drain”, reduction of high-tech productions, reduction of living standards of the population, and destruction of institutes of management, which aggravates initial conditions for modernization and, correspondingly, requires development of the mechanism that would allow combining private initiative and state interference under the conditions of observation of the balance of public interests during performance of modernization processes;
- successful modernization is possible only on the basis of self-developing model. In this case, the example of China is very demonstrative, as there the modernization process was based on such competitive advantage as cheap labor, the usage of which attracted Western investments into the Chinese economy. Combination of these two factors – cheap workforce and investments – ensured high rates of growth of Chinese economy and took China to the second position in the world as to volume of GDP. Therefore, during development of the model of modernization of Russian economy, it is necessary to determine competitive advantages, realization of potential capabilities of which will allow performing “breakthrough” growth in economy and will create conditions for development of society on the whole;
- an obvious competitive advantage of Russia is its provision with resources, but it is the raw materials orientation of Russian economy that forms ineffective political system, which, in its turn, stimulates reproduction of economic underdevelopment of the country. Thus, during conduct of the process of modernization, founding only on the raw materials sector is erroneous, as it would stimulate conservation of ineffective political and economic systems; still, in order to use it as a source of potential investments in development of technical and technological basis of modernization, it is necessary to do the following:
  - potential of industrial modernization is not yet realized in full in Russia, but certain features of modern Russian economy allow speaking on specificity of modernization in Russia, as it is closely related to post-modernization, aimed at formation of the sixth technological mode, which should be taken into account while selecting the model of modernization development.

These conditions should be taken into account while selecting the variant of Russian modernization from the following alternatives: firstly, priority should be given to an overtaking model, based on borrowing the technologies, or advancing model, which supposes active use of innovations; secondly, who can and must become a driving force of modernization process – state or society, *i.e.*, will the Russian modernization have conservative or liberal character?

It should be noted that even with the liberal model, a special role in the modernization process will belong to the state, which is characterized by functions for stimulating activities of economic subjects.

Thus, the idea of this article consists in substantiating the necessity for realization of the overcoming model of modernization of the modern Russian economy, based on implementation of innovations, and in determining the effective tools of state regulation of innovative activities in the country.

## Conclusions

An active participant of relations that accompany the process of formation of the model of innovational economy is the state. Stimulating innovational activities, the state uses the system of economic and organizational and legal methods, each of which supposes the use of corresponding tools, *i.e.*, the set of quantitative and qualitative parameters which express the action of a stimulus fixed to the tool. Being a basis of measures aimed at development and activation of innovative activities, the tools of stimulation determine effectiveness of state stimulation of innovative activities and ways for increasing it. Thus, spending limited budget resources for the purposes of stimulation of innovative activities should take into account costs suffered by the state during application of tools of stimulation and results received during that. The offered methodology of quantitative evaluation of effectiveness of state stimulation of innovative activities allows evaluating effectiveness of particular tools of stimulation of innovative activities, determining ineffective, conventionally effective, and effective tools, develop recommendations for redistribution of budget assets in favor of more effective tools, and exclude ineffective tools of stimulation. This methodology is realized through calculation of integral indicator of effectiveness, which includes private indicators of effectiveness of tools of stimulation, applied by the state, which became most popular in the practice of state regulation and influence the efficiency of innovative activities in the state.

## References

- [1] Balatskiy, E. V. 2010. *Innovational and Technological Matrix of Regions of Russia*. Available at: <http://kapital-rus.ru/articles/article/177921/>
- [2] Drobyshevskaya, L. N., Ter-Saakyan, A. G. 2011. Improvement of forms and methods of management of innovative activities of enterprises. *Economics: Theory and Practice*. 3 (23): 42-48.
- [3] Dzhavadova, I. S. 2011. *Financial Stimulation of Innovational Development in the System of State Regulation*. Economic theory. Moscow. 26 p.
- [4] Feldman, G. A. 1927. Thoughts on structure and dynamics of national economy of the USA from 1850 to 1925 and of the USSR from 1926/27 to 1940/41. *Planned Economy*. No. 2.
- [5] Feldman, G. A. 1928. Theories of rates of national income. *Planned Economy*, 12: 157-161.
- [6] Feldman, G. A. 1929. Analytical method of creation of perspective plans. *Planned economy*, 12: 111-117.
- [7] Feldman, G. A. 1929. The USSR and the global economy at the brink of the second year of the five-year plan. At the plan front. No. 2.
- [8] Gedich, T. G., Urazova, N. G. 2008. *Approach to evaluation of effectiveness of budget investments* [Text] // Innovations. 5: 87-92 pp.
- [9] Gomon, I. V. 2011. State support and regulation in stimulation of innovational activity in Russian economy // *Problems of Modern Economy*. 3(39): 5-15. Available at: <http://www.m-economy.ru/art.php?nArtId=3680>
- [10] Kalacheva, O. S. 2012. *Development of methods of tax stimulation of innovative activities in Russia*. Economics and management of national economy (management of innovations). Volgograd. 28 p.
- [11] Lenchuk, E. B. 2000. *Innovational aspect of formation of scientific and technical policy in modern Russia* [Text]. – M.: Naukovedenie, 233 p.
- [12] Lukin, A. E. 2010. *Tax stimulation of innovative activities in the system of state regulation* [Text]: PhD thesis: 08.00.01. Economic theory. Moscow. 28 p.
- [13] Magomedov, A. A. 2010. *Organizational and economic mechanism of stimulation of innovative activities of a construction enterprise* [Text]: PhD thesis: 08.00.05 – Economics and management of national economy (management of innovations). Makhachkala. 24 p.
- [14] Poltavskiy, P. A. 2010. State regulation of innovative activities. Bulletin of Chelyabinsk State University. *Economics*, 29 27 (208): 52-56.



- [15] Romanova, O. A., Nelyubina, T. A. 2010. Instability of socio-economic systems as a factor of their sensitivity to changes. *Economy of Region*, 3: 211-217.
- [16] Shvedova, M. V., Korneeva, N. V. 2009. State stimulation of innovative activities. Economic development of modern Russia: problems and perspectives: proceedings of II republican scientific and practical conference of students devoted to 40<sup>th</sup> anniversary of the Department of Economics, December 7-9, 2009 – Saransk: Mordovia State University. 47-55 pp.
- [17] Sidorina, I. F. 2011. *Long-term targeted programs as a tool of increase of effectiveness of expenses of the budget of subject of the Russian Federation* [Text]: PhD thesis: 08.00.10 – Finances, money turnover, and credit. – Ivanovo. 16 p.
- [18] Spitsyn, V. V. 2010. Comparative analysis of indicators of innovative activities of Russia and foreign countries. *Bulletin of Tomsk State University*, 331: 153-158.
- [19] Tverytneva, N. N. 2002. *Economic evaluation of effectiveness of investments into innovational activities aimed at improvement of ecology of large cities*. Economics and management of national economy: economics, organization, and management of sectors, enterprises, and complexes (construction). Moscow. 164 p.
- [20] Yakovets, Y., Kuzyk, B. 2010. Situational analysis and forecasting of factors of economic dynamics of Russia: Scientific report – M.: MISK. 51 p.
- [21] Zhitenko, E. D. 2004. *Effectiveness of stimulation of innovations*. *Innovations*, 3: 15-20.
- \*\*\* Periodical overview of innovative activities of leading countries of innovational development in Europe, North America, and Asia. 2011. No. 2: 62 p Available at: [http://www.economy.gov.ru/wps/wcm/connect/408cb600475514cf89f9cfb4415291f1/obzor\\_innov\\_deyateln\\_2](http://www.economy.gov.ru/wps/wcm/connect/408cb600475514cf89f9cfb4415291f1/obzor_innov_deyateln_2)

## The Effect of Budgeting Participation, and Slack Budget in Relationship Between Politic, Culture, and Regulation to Financial Performance

HALIAH

Department of Accounting, Faculty of Economics  
University of Hasanuddin  
[haliah.unhas.jp@gmail.com](mailto:haliah.unhas.jp@gmail.com)

GAGARING

Department of Accounting, Faculty of Economics  
University of Hasanuddin  
[gagaring.unhas.jp@gmail.com](mailto:gagaring.unhas.jp@gmail.com)

MEDIATY

Department of Accounting, Faculty of Economics  
University of Hasanuddin  
[mediaty.unhas.jp@gmail.com](mailto:mediaty.unhas.jp@gmail.com)

MUSHAR

Department of Accounting, Faculty of Economics  
University of Hasanuddin  
[mushar.unhas.jp@gmail.com](mailto:mushar.unhas.jp@gmail.com)

### Suggested Citation:

Haliah, Gagaring, Mediaty, Mushar. 2017. The effect of budgeting participation, and slack budget in relationship between politic, culture, and regulation to financial performance. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 374 – 390.

### Abstract:

The purpose of this study is to empirically examine the causes of the budgetary slack and its impact on performance. Specifically the purpose of this study to analyze the influence of information asymmetry, cultural, political, regulatory, budgetary participation on budgetary slack and performance in local government. Studies in order to develop models penganggaran good (good governance budgeting). Using the survey method and the research instrument in questionnaire tested using PLS. The results showed that the political, cultural, regulation significant effect on budgetary slack. The third structural coefficient of the relationship is positive, indicating that all three positive relationship. That is, the higher the political, cultural, regulatory, will result in the higher budgetary slack. Thus if you want to reduce the budgetary slack needs to reduce the problems of politics, culture and regulations. Other results obtained: (A) political, cultural, regulatory, significant effect on performance either directly or indirectly through budgetary slack. Sixth structural coefficient of the relationship is positive, indicating that all six positive relationship. (B) information asymmetry and budgetary slack significant effect on performance. The second structural coefficient correlation is positive, indicating that both positive relationship. (C) budgeting participation moderating influence budgetary slack variables that are false and strengthen moderation.

**Keywords:** budgetary slack; performance budgeting participation; information asymmetry; politics, culture and regulation.

**JEL Classification:** A2; C3; D10; G0; H1; I2

### Introduction

Budget can be defined as a plan of all activities of the organization in the short term expressed in quantitative or financial unit. Budget is important because it is used as a means of planning and controlling. Error in budgeting may fail planning resulting in difficult to achieve organizational goals. Error in budgeting can occur because it involves human interaction in the process of preparation. This interaction can bring a wide range of behaviors. One of them creates slack in the budget because it is motivated by the achievement of a budget used as a performance assessment. This study took political, cultural, regulatory, information asymmetry, participation in budgeting

variables as variables affected budgetary slack and performance. Those variables were chosen because similar studies using these variables were still rare.

Originality for this papers shows as: the writer tries to conduct a research about mediation effect of slack budget moderating effect of budget participation in relationship between politic, culture, and regulation toward organizational performance; this research retest the research result From Fisher (2002) about information asymmetry and performance, Rubin (1993) about political, budgetary slack and performance, Scott (2000) about Regulatory, budgetary slack and performance, Indriantoro (2000) about mediation of participation in budgeting on budgetary slack and performance, and Mardiasmo (2005) about budgetary slack and performance. no studies have examined this kind of relationship simultaneously location of study (no previous research for this relationship): local governments in West Sulawesi.

## Conclusion

The conclusions of this study were the conclusions of the data test results, *i.e.*:

- political, cultural, regulatory variables significantly affected on budgetary slack. The structural coefficient of the relationship of those three had positive-marked, indicating that the relationship of all those three was positive. Thus, the higher the political, cultural, regulatory variables will result in the higher budgetary slack;
- political, cultural, regulatory variables significantly affected on performance both directly and indirectly through budgetary slack. Structural coefficient of the relationship of those six had positive-marked, indicating that the relationship of all those six was positive. Thus, the higher the political, cultural, regulatory variables will lead to the higher the performance both directly or indirectly through budgetary slack.
- information asymmetry and budgetary slack significantly affected on performance. The structural coefficient of the relationship of those two had positive-marked, indicating that the relationship of those two was positive. Thus, the higher the information asymmetry and budgetary slack will result in the higher the performance.
- participation of budgeting moderated the effects of budgetary slack variable (Y1) which were quasi moderator and strengthening. Thus, the higher the value of participation in budgeting (M), affecting the more increasing the effect of budgetary slack (Y1) on performance (Y2)

Based on the conclusions, it is recommended: to reduce the budgetary slack to reduce the problems of political, cultural and regulatory variables; to improve the performance, then the participation in budgeting, information asymmetry need to be improved. While the political, cultural and regulatory process will maximally improve performance if through budgetary slack.

## References

- [1] Adams, D. A., Nelson, R. R., and Todd, P. A. 1992. Perceived Usefulness, Ease of Use, and Information Technology. *A replication, MIS Quarterly*, 6: 227-247.
- [2] Chow, C. W, Cooper, J. C and Waller, W. S. 1988. Participative Budgeting: Effects of a Truth-Inducing Pay Scheme and Information Asymmetry on Slack and Performance. *The Accounting Review*, 63(1): 111-122.
- [3] Davis, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance Information Technology. *MIS Quarterly*, 13: 319-340.
- [4] Fisher, J. G., Maines, L. A., Pfeffer, S. A., and Sprinkle, G. B. 2002. Using Budget for Performance evaluation: Effects of Resource Allocation and Horizontal Information Asymmetry on Budget Proposals, Budget Slack and Performance. *The Accounting Review*, 77 (4): 847-865.
- [5] Frost, G., and Bryan, H. 2003. *Accounting Theory*. 5<sup>th</sup> Ed. John Wiley and Sons Australia, Ltd.
- [6] Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. and Tatham, R. L. 2006. *Multivariate Data Analysis*. Sixth Edition, Pearson Education, Inc., Upper Saddle River, New Jersey, Prentice Hall. ISBN-10: 0130329290; 13: 978-0130329295
- [7] Haliah, Muallimin, and Nirwana. 2014. The Role of Participation in Budget Preparation as Mediation in Relationship Between Information Technology, Knowledge of the Budget and Political Processes to Quality of Report. *International Journal of Applied Business and Economic Research*, 12(3): 885-891.
- [8] Haliah, Gagaring, Mushar, and Mediaty. 2015. *Effect of Information Asymmetry, Politics, Culture Against Participation Budgeting and budgetary slack. (Studies in Development Framework Model Penganggaran good (Good Governance Budgeting) by Wisdom-Based Local Culture)*. (In Indonesia *Efek Informasi Asimetri, Politik, Budaya Terhadap Partisipasi Penyusunan Anggaran dan Senjangan Anggaran. (Kajian dalam Rangka Pengembangan Model Penganggaran yang baik (Good Governance Budgeting) dengan Berbasis Kearifan Budaya Lokal)*. *Penelitian Unggulan Perguruan Tinggi - Tahun pertama – Dikti*). Penelitian ini telah di publikasi

dengan judul "The Effects of the Asymmetry, the Political and the Cultural Information on the Budgetary Participation and Budgetary Slack in the Local Government (the Studies for the Development of the Good Governance Budgeting with the Wisdom Local Culture-Based). *International Journal of Applied Business and Economic Research*.

- [9] Hansen Don R dan Mowen. 2006. *Management Accounting*. Salemba Empat. Jakarta. ISBN: 0324376006, 9780324376005
- [10] Haryanto, Mushar, dan Haliah. 2013. *In Indonesia Effect of Budget Discipline, Politics and Public Interest In The Public Budget Process Local Government in Indonesia( In IndonesianPengaruh Disiplin Anggaran, Politik dan Interest Publik Dalam Proses Penyusunan Anggaran Publik Di Pemerintahan Daerah Di Indonesia)* Available at: <http://etd.uum.edu.my/3468/8/s91027.pdf>
- [11] Haryanto, Kartini, Haliah. 2014. The Effect of Managerial, Political, and Public Interest on Budget Process in Local Government of Indonesia. *Society of Interdisciplinary Business Research (SIBR) Conference. Kuala Lumpur, Malaysia, Tanggal 7-8 Pebruari 2014*
- [12] Haryanto, Kartini, Haliah. 2014. Budget Process of Local Government in Indonesia. Vol 3, Issue 2 (July) *Review of Integrative Business and Economics Research*. ISSN: 2304-1013 (on line). ISSN: 2304-1269 (CDROM).
- [13] Hofstede, G. H. 1983. The Cultural Relativity of Organizational Practices and Theories. *Journal of International Business Studies*, 14(2): 75-90.
- [14] Howard, G. S. 1986. Computer anxiety and the use of microcomputers in management (UMI Research Press, Ann Arbor, MI). ISBN: 0835717593, 9780835717595
- [15] Indriantoro, N. 1993. The Effect of Participative Budgeting on Job Performanceand Job Satisfaction with Locus of Control and Cultural Dimensions as moderating variable, *Dissertation*, PhD diss, Gajahmada University.
- [16] Jensen, M. C., and Meckling, W. H. 1976. Theory of the Firm: Managerial Behavior, Agency Cost and Ownership Structure. *Journal of Financial Economics*, 3: 305-360.
- [17] Khalid A. R., dan Deborah L. L. 2012. Municipal Budgeting: Positives, Pitfalls, and Politics. *Proceedings of ASBBS Volume 19 Number 1. ASBBS Annual Conference: Las Vegas February 2012*.
- [18] Kotter, J. P., dan Heskett, J. L. 1997. *Corporate Culture and Performance*, Jakarta: PT. Prenhallindo. ISBN-10:1451655320
- [19] Mardiasmo. 2005. *Akuntansi Sektor Publik*. Andi. Yogyakarta. Available at: [http://www.academia.edu/5091764/AKUNTANSI\\_SEKTOR\\_PUBLIK](http://www.academia.edu/5091764/AKUNTANSI_SEKTOR_PUBLIK)
- [20] Merchant, K. A. 1981. The Design of Corporate Budgeting System: Influence on Managerial Behavior and Performance. *The Accounting Review*, 56(4): 813 – 829.
- [21] Parker, D. 1999. Regulation of Privatised Public Utilities in the UK: Performance and Governance International. *Journal of Public Sector Management*, 12(3): 213-235.
- [22] Rahim, A R. 2011. *Nilai-Nilai Utama Kebudayaan Bugis*. Yogyakarta: Ombak. ISBN: 978-602-8335-71-3
- [23] Ranggawidjaja, R. H. 1998. *Pengantar Ilmu Perundang-Undangan Indonesia*. Mandar Maju, Bandung. Available at: <http://lsfciputat.blogspot.ro/2014/02/pengantar-ilmu-perundang-undangan.html>
- [24] Rubin, I. S. 1993. *The Politics of Public Budgeting: Getting and Spending, Borrowing and Balancing*. Second edition. Chatam, NJ: Chatham House Publishers, Inc. ISBN: 0934540977; 9780934540971
- [25] Scott, W.R. 2000. *Financial Accounting Theory*. New Jersey: Prentice Hal. ISBN-13: 978-0135119150

- [26] Supomo, B. dan Indriantoro, N. 1998. *Influence of Organizational Structure and Culture of the Effectiveness Budget Participation in Managerial Performance Improvement; an empirical study on a manufacturing company in Indonesia (In Indonesia Pengaruh Struktur dan Kultur Organisasional terhadap Keefektifan Anggaran Partisipasi dalam Peningkatan Kinerja Manajerial; studi empiris pada perusahaan manufaktur di Indonesia)*, 7(18): 61-84.
- [27] Siegel, G., dan H.R. Marconi. 1989. *Behavioral Accounting*. South Western Publishing, Co. Cincinnati, OH. ISBN: 0538016507 9780538016506
- [28] Spielberger, C. D. 1966. *Anxiety and Behavior*. Academic Press, New York. ISBN: 978-1-4832-3131-0
- [29] Wildavsky, A. 1992. Political Implications of Budget Reform: A Retrospective. *Public Administration Review*, 52(6): 594-599.
- [30] Wu, Eng C. 2005. Convergence of Attitudes in Different Cultures Towards the Budgeting Process. *Journal of Business and Management*;11(2):29.
- [31] Young S. M. 1985. Participative Budgeting: The Effect of Risk Aversion and Asymmetric Information on Budgetary Slack. *Journal of Accounting Research*, 23(2): 829-842.

## Appendix 1

## Results of test instrument validity and reliability

## Test results validity of the instrument

Variable	Dimension	Item	Validity	Conclusion
Politic (X1)		X1.1	0.444	Valid
		X1.2	0.308	Valid
		X1.3	0.453	Valid
		X1.4	0.352	Valid
		X1.5	0.368	Valid
Culture (X2)	Intellectualisation (X2.1)	X2.1.1.	0.443	Valid
		X2.1.2.	0.350	Valid
		X2.1.3.	0.379	Valid
		X2.1.4.	0.364	Valid
		X2.1.5	0.300	Valid
	Honesty / lempu (X2.2)	X2.2.1	0.389	Valid
		X2.2.2	0.374	Valid
		X2.2.3	0.417	Valid
		X2.2.4	0.321	Valid
		X2.2.5	0.393	Valid
	Firmness / (X2.3)	X2.3.1	0.401	Valid
		X2.3.2	0.307	Valid
		X2.3.3	0.420	Valid
		X2.3.4	0.323	Valid
		X2.3.5	0.332	Valid
	Decency (X2.4)	X2.4.1	0.358	Valid
		X2.4.2	0.361	Valid
		X2.4.3	0.334	Valid
		X2.4.4	0.300	Valid
		X2.4.5	0.431	Valid
	Effort (X2.5)	X2.5.1	0.387	Valid
		X2.5.2	0.349	Valid
		X2.5.3	0.387	Valid
		X2.5.4	0.353	Valid
		X2.5.5	0.331	Valid
Shame / pride (X2.6)	X2.6.1	0.484	Valid	
	X2.6.2	0.327	Valid	
	X2.6.3	0.427	Valid	
Regulation (X3)	Perceptions About the usefulness of Regulation (X3.1)	X3.1.1	0.424	Valid
		X3.1.2	0.428	Valid
		X3.1.3	0.402	Valid
	Perceptions About Ease of Use Regulations (X3.2)	X3.2.1	0.447	Valid
		X3.2.2	0.370	Valid
		X3.2.3	0.420	Valid
	Confusion Usage Rules (X3.3)	X3.3.1	0.425	Valid
		X3.3.2	0.424	Valid
		X3.3.3	0.415	Valid
	Usage Rules (X3.4)	X3.4.1	0.436	Valid
		X3.4.1	0.436	Valid
	Information Asymmetry (X4)		X4.1	0.463
X4.2			0.300	Valid

Variable	Dimension	Item	Validity	Conclusion
		X4.3	0.511	Valid
Participation Budgeting (M1)	Level of Involvement (M1.1)	M1.1.1	0.422	Valid
		M1.1.2	0.389	Valid
		M1.1.3	0.425	Valid
	Benefits of Engagement (M1.2)	M1.2.1	0.418	Valid
		M1.2.2	0.345	Valid
		M1.2.3	0.533	Valid
Slack Budget (Y1)		Y1.1	0.400	Valid
		Y1.2	0.404	Valid
		Y1.3	0.559	Valid
Performance (Y2)		Y2.1	0.478	Valid
		Y2.2	0.419	Valid
		Y2.3	0.507	Valid

Source: Primary data are processed (2016)

#### Instrument reliability test results

Variable	Reliability	Conclusion
Politic (X1)	0.608	Reliable
Culture - intellectualisation (X2.1)	0.610	Reliable
Culture - honesty (X2.2)	0.625	Reliable
Culture - firmness (X2.3)	0.602	Reliable
Culture - decency (X2.4)	0.601	Reliable
Culture - effort (X2.5)	0.607	Reliable
Culture - shame (X2.6)	0.602	Reliable
regulation - Perceptions About Usefulness Regulation (X3.1)	0.609	Reliable
regulation - Perceptions About Ease of Use Regulation (X3.2)	0.603	Reliable
regulation - Confusion of Use Regulation (X3.3)	0.613	Reliable
regulation - Usage Rules Section (X3.4)	0.607	Reliable
Information Asymmetry (X4)	0.600	Reliable
Budgetary participation - Level of Involvement (M1.1)	0.604	Reliable
Participation Budgeting - Benefits of Engagement (M1.2)	0.620	Reliable
Slack Budget (Y1)	0.642	Reliable
Performance (Y2)	0.657	reliable

Source: Primary data are processed (2016)

## Appendix 2.

### Characteristics of Respondents

Characteristics	Criteria	Frequency	Percentage
Gender	Male	194	48,50
	Female	106	26,50
Age	<45 yrs	24	6,00
	45-56 yrs	183	45,75
	> 56 yrs	93	23,25
Education	S1	128	32
	S2	172	43
Years of service	10-19 yrs	102	25,50
	20-29 yrs	160	40,00
	>30 yrs	38	9,50

Source: Primary data are processed (2016)



Appendix 3.

Frequency and percentage of political variables

Indicator	Respondents answer Score							Mean
	unit	1	2	3	4	5	Total	
X1.1	Frequency	1	29	80	102	88	300	3.82
	Percent (%)	0.33	9.67	26.67	34	29.33	100	
X1.2	Frequency	8	36	80	101	75	300	4.41
	Percent (%)	2.67	12	26.67	33.67	25	100	
X1.3	Frequency	5	35	68	101	91	300	3.79
	Percent (%)	1.67	11.67	22.67	33.67	30.33	100	
X1.4	Frequency	4	37	84	96	79	300	3.70
	Percent (%)	1.33	12.33	28	32	26.33	100	
X1.5	Frequency	2	40	79	95	84	300	3.73
	Percent (%)	0.67	13.33	26.33	31.67	28	100	
Mean Variable X1 (Politic)								3.89

Source: Primary data are processed (2016)

Frequency and percentage cultural variables

Indicator	Respondents answer Score							Mean
	unit	1	2	3	4	5	Total	
X2.1.1	Frequency	3	53	95	61	88	300	3.59
	Percent (%)	1	17.67	31.67	20.33	29.33	100	
X2.1.2	Frequency	18	61	69	93	59	300	4.18
	Percent (%)	6	20.33	23	31	19.67	100	
X2.1.3	Frequency	3	52	100	89	56	300	3.48
	Percent (%)	1	17.33	33.33	29.67	18.67	100	
X2.1.4	Frequency	16	51	100	84	49	300	3.33
	Percent (%)	5.33	17	33.33	28	16.33	100	
X2.1.5	Frequency	16	54	85	84	61	300	3.40
	Percent (%)	5.33	18	28.33	28	20.33	100	
Mean Dimensions intellectualisation / Amacangeng / Manarang (X2.1)								3.60
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X2.2.1	Frequency	7	34	80	92	87	300	3.73
	Percent (%)	2.33	11.33	26.67	30.67	29	100	
X2.2.2	Frequency	19	41	80	100	60	300	4.27
	Percent (%)	6.33	13.67	26.67	33.33	20	100	
X2.2.3	Frequency	13	45	72	95	75	300	3.58
	Percent (%)	4.33	15	24	31.67	25	100	
X2.2.4	Frequency	9	48	86	78	79	300	3.57
	Percent (%)	3.00	16	28.67	26	26.33	100	
X2.2.5	Frequency	11	47	81	98	63	300	3.52
	Percent (%)	3.67	15.67	27	32.67	21	100	
Mean Dimensions Honesty / Allempureng / Lappu '(X2.2)								3.73
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X2.3.1	Frequency	12	29	65	111	83	300	3.75
	Percent (%)	4.00	9.67	21.67	37	27.67	100	
X2.3.2	Frequency	2	22	75	118	83	300	4.58
	Percent (%)	0.67	7.33	25	39.33	27.67	100	

X2.3.3	Frequency	9	29	68	99	95	300	3.81
	Percent (%)	3.00	9.67	22.67	33	31.67	100	
X2.3.4	Frequency	5	27	66	111	91	300	3.85
	Percent (%)	1.67	9	22	37	30.33	100	
X2.3.5	Frequency	6	35	75	104	80	300	3.72
	Percent (%)	2.00	11.67	25	34.67	26.67	100	
Mean firmness /Agettangeng (X2.3)								3.94
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X2.4.1	Frequency	1	26	89	105	79	300	3.78
	Percent (%)	0.33	8.67	29.67	35	26.33	100	
X2.4.2	Frequency	5	32	76	106	81	300	4.48
	Percent (%)	1.67	10.67	25.33	35.33	27	100	
X2.4.3	Frequency	8	43	110	93	46	300	3.42
	Percent (%)	2.67	14.33	36.67	31	15.33	100	
X2.4.4	Frequency	6	31	106	99	58	300	3.57
	Percent (%)	2.00	10.33	35.33	33	19.33	100	
X2.4.5	Frequency	10	35	92	91	72	300	3.60
	Percent (%)	3.33	11.67	30.67	30.33	24	100	
Mean Indicators Decency /Asitinajangan/Mappasitinaja (X2.4)								3.77
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X2.5.1	Frequency	15	12	86	112	75	300	3.73
	Percent (%)	5.00	4.00	28.67	37.33	25	100	
X2.5.2	Frequency	7	22	56	128	87	300	4.60
	Percent (%)	2.33	7.33	18.67	42.67	29	100	
X2.5.3	Frequency	7	22	62	123	86	300	3.86
	Percent (%)	2.33	7.33	20.67	41	28.67	100	
X2.5.4	Frequency	7	31	78	103	81	300	3.73
	Percent (%)	2.33	10.33	26	34.33	27	100	
X2.5.5	Frequency	9	16	50	119	106	300	3.99
	Percent (%)	3.00	5.333	16.67	39.67	35.33	100	
Mean Indicator Effort/Reso (X2.5)								3.98
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X2.6.1	Frequency	3	60	90	67	80	300	3.54
	Percent (%)	1.00	20.00	30	22.33	26.67	100	
X2.6.2	Frequency	2	57	119	60	62	300	3.41
	Percent (%)	0.67	19	39.67	20	20.67	100	
X2.6.3	Frequency	4	73	83	74	66	300	3.42
	Percent (%)	1.33	24.33	27.67	24.67	22	100	
Mean Dimensions Shame: Self-Esteem: Siri (X2.6)								3.45
Mean X2 (Culture)								3.75

Source: Primary data are processed (2016)

And the percentage of variable frequency regulation

Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X3.1.1	Frequency	4	37	73	113	73	300	3.71
	Percent (%)	1.33	12.33	24.33	37.67	24.33	100	
X3.1.2	Frequency	10	48	83	90	69	300	3.53
	Percent (%)	3.33	16	27.67	30	23	100	
X3.1.3	Frequency	6	45	85	103	61	300	3.56
	Percent (%)	2.00	15	28.33	34.33	20.33	100	
Dimension Mean Perception on Purpose Regulation (X3.1)								3.60
Indicator	Respondents answer Score							Mean
	unit	1	2	3	4	5	Total	
X3.2.1	Frequency	2	30	121	74	73	300	3.62
	Percent (%)	0.67	10.00	40.33	24.67	24.33	100	
X3.2.2	Frequency	8	55	87	91	59	300	3.46
	Percent (%)	2.67	18.33	29	30.33	19.67	100	
X3.2.3	Frequency	5	43	113	70	69	300	3.52
	Percent (%)	1.67	14.33	37.67	23.33	23	100	
Dimension Mean Perception About Ease of Use Regulations (X3.2)								3.53
Indicator	Respondents answer Score							Mean
	unit	1	2	3	4	5	Total	
X3.3.1	Frequency	11	52	82	87	68	300	3.50
	Percent (%)	3.67	17.33	27.33	29	22.67	100	
X3.3.2	Frequency	8	57	66	82	87	300	3.61
	Percent (%)	2.67	19	22	27.33	29	100	
X3.3.3	Frequency	5	63	84	80	68	300	3.48
	Percent (%)	1.67	21	28	26.6	22.6	100	
Dimensions Mean Confusion Usage Rules (X3.3)								3.53
Indicator	Respondents answer Score							Mean
	Unit	1	2	3	4	5	Total	
X3.4.1	Frequency	3	45	99	81	72	300	3.58
	Percent (%)	1.00	15.00	33	27	24	100	
X3.4.2	Frequency	4	38	108	88	62	300	3.55
	Percent (%)	1.33	12.67	36	29.33	20.67	100	
Dimensions Mean Use of Regulation (X3.4)								3.57
Variable Mean X3 (Regulation)								3.56

Sources: Primary data are process

## Industrial Parks Formation as a Tool for Development of Long-Range Manufacturing Sectors

Svetlana N. KUZNETSOVA

Kozma Minin Nizhny Novgorod State Pedagogical University, Russia  
[dens@52.ru](mailto:dens@52.ru)

Ekaterina P. GARINA

Kozma Minin Nizhny Novgorod State Pedagogical University, Russia  
[e.p.garina@mail.ru](mailto:e.p.garina@mail.ru)

Viktor P. KUZNETSOV

Kozma Minin Nizhny Novgorod State Pedagogical University, Russia  
[kuzneczov-vp@mail.ru](mailto:kuzneczov-vp@mail.ru)

Elena V. ROMANOVSKAYA

Kozma Minin Nizhny Novgorod State Pedagogical University, Russia  
[alenarom@list.ru](mailto:alenarom@list.ru)

Natalia S. ANDRYASHINA

Kozma Minin Nizhny Novgorod State Pedagogical University, Russia  
[natali\\_andr@bk.ru](mailto:natali_andr@bk.ru)

### Suggested Citation:

Kuznetsova, S. N., Garina E. P., Kuznetsov, V. P., Romanovskaya, E. V., Andryashina, N. S. 2017. Industrial parks formation as a tool for development of long-range manufacturing sectors. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 391 – 401.

### Abstract:

The article reveals the main aspects of the industrial parks creation in the regions of Russian Federation as the tools of the development long-range sectors and the regions on the whole. The subject of the research is the business relations that appear when enterprises are integrated in the industrial parks. The goal of the research is to maintain the theoretical basis and the methodological tools in the industrial parks formation areas.

The methodological basis of the article includes the works of foreign and Russian whose works are devoted to business development. Scientific contribution of the research is the development of theoretical and methodological basis in the sphere of the industrial parks implementation. Methodological basis of the industrial parks management needs improvements. Due to this fact, improvement of the business mechanisms in the industrial parks is quite vital, because it is dedicated to the increase of competitiveness of industrial parks in Russian Federation and to import substitution. The partnership measures between the government and business allows giving an impulse to the industrial development and involving the regions into the global development processes. Industrial parks are the sources to increase competitiveness and fasten the social development in Russian regions. The results of the research can be used in the industrial enterprises. The research can be used by the executive authorities and by the quasi corporations, as well as by private business in the frameworks of the purpose-oriented programs that are dedicated to the industrial development.

**Keywords:** tools of the industrial development; industrial park; territorial-production clusters; competitive edges

**JEL Classification:** C38; L10.

### Introduction

The article analyzes the dynamics of the modern industrial enterprises, which is determined by permanent search, introduction of innovations, and increase of competitiveness by means of new technologies and a short gap between the innovational research and their implementation to the production. A modern way to solve the problem is the industrial parks. As a long-range direction of development of industrial parks, industrial areas are used which meet the most part of the requirements.

Methodological and theoretical base lines are the works of Russian and foreign authors, dedicated to the industrial development problems. The development and the completeness the theory of the complex synergetic solutions appeared in 1980-1990 in the works of R.J. Griefen. The questions of the effectiveness of the manufacturers unification along the technological chain – from the production of the materials to the supply of the customers with the ready-made products – were raised by M. Badri and D. Davis. The questions of local industrial complexes management are elaborated in the works of such Russian scientists as O.I. Botkina, V.N. Eremina, V.I. Nekrasova, K.M. Pirogova, A.N. Pytkina, A.I. Tatarkina, *et al.*

We highly assess the works of the scientists but admit that the questions of industrial conformation creation and integration are not developed properly.

## Conclusions

The transfer from the departmental managing system to corporate one leads to disintegration of the manufacturing and industrial enterprises. They have the common chain of the value creation. For example, the center of decision-making has deviated from sector ministries to demolished and privatized enterprises that create the components for local automating. Objectively, it leads to the local enterprises shortage. As the result, import of the component base has increased. It takes time and efforts from the state to smooth the situation via holding creation and economic policy activation.

At the same time, studying different approaches to the production activity at local enterprises, let us state that competitiveness guarantee will be connected to inter-companies' brunches and nets. Building the integrated inter-company net of the enterprises is possible, based on the IP and other big auto making enterprises. IP create all the conditions to increase the effectiveness of the small and medium manufactures. Therefore, IP is a very effective tool to integrate small industrial enterprises into industrial clusters.

The following conclusions could be made:

- industrial park is a specially organized territory to place new manufacturers, provided with the energy source, infrastructure, and necessary administrative rights, which is managed by the special managing company;
- there are three models of industrial park management. The first model allows managing the industrial park by the infrastructure company that provides not only the space to place the manufacture but necessary additional infrastructure and services. According to the second model, small IP are not managed by the special companies and firms that place the manufacturers there and find all the services by themselves or attract other companies. In some IP, one of the companies that place the manufacture at the same time takes the functions of the managing company;
- the task of investment climate improvement today is of high priority at the federal and local levels. So, there is a support system of the IP and the residents – from administrative assistance to necessary infrastructure creation;
- in spite of preferences and benefits, investors face different problems when trying to bring a project to life: administrative obstacles, corruption risks, and low quality of engineer and transport infrastructure;
- it is necessary to pass the law that regulates IP. Legislative assembly and government deal with the problems of IP, but there is no law about “Industrial Parks”;
- governmental support for creation and development of the industrial parks network (residents, investors, and managing companies) includes the direct financial support (fiscal relief, grants, guarantees, etc.) and indirect support (administrative obstacles, marketing, and information support);
- for regional authorities, the creation of special industrial clusters is one of the elements how to raise the region investment attractiveness and a guarantee of the successful regional economic development, transfer to innovative type development and raising of citizen's living conditions. IP creation is still a very vital problem, even taking into account foreign policy and non-stable dynamic of the foreign investments and geo-political re-orienting.

## References

- [1] Badri, M. A., Davis, D. L., Davis, D. 1995. Decision support models for the location of firms in industrial sites. *International Journal of Operations & Production Management*, 15 (1): 50-62
- [2] Fei, Y., Feng, H., Zhaojie, C. 2015. Evolution of industrial symbiosis in an eco-industrial park in China. *Journal of Cleaner Production*, 87: 339-347.
- [3] Festel, G. 2008. The performance level makes the difference. *Chemische Rundschau - Industrial Sites Supplement*, 61 (4):16-18.
- [4] Festel, G. 2011. Infrastruktur-spezifische Aspekte beim Benchmarking. *Chemie Plus*, 20 (11): 10-11
- [5] Festel, G. 2013. Würmseher M. Challenges and strategies for chemical/industrial parks in Europe. *Journal of Business Chemistry*. Available at: <http://www.businesschemistry.org/article/?article=173> (accessed

30.10.2015)

- [6] Fujita, M, Thisse, J. F. 2002. *Economics of Agglomeration Cities, Industrial Location, and Regional Growth*, Cambridge University Press, p. 104-106.
- [7] Garin, A. P. 2012. Theoretical aspects of the economic potential assessment at the industrial enterprise. *Cherepovets State University Reporter*, 2 (39-2): 38-40
- [8] Garina, E., Kuznetsova, S., Semakhin, E., Semenov, S., Sevryukova, A. 2015. Development of National Production through Integration of Machine Building Enterprises into Industrial Park Structures. *European Research Studies*, Volume XVIII, Special Issue, p. 267-282
- [9] Griefen, R. J. 1979. The Impact of the Industrial Park. *Appraisal Journal*, 38 (1): 83-91
- [10] Kardapoltsev, K. V. 2009. *Economic effectiveness assessment improvement at the industrial integrated holding company structures: synopsis of the thesis candidate of economic science*. South-Ural State University. Chelyabinsk, 24 p.
- [11] Kaskey, J. 2012 Dow Chemical to Close Five Plants on Slower European Economy. Available at: <http://www.bloomberg.com/news/2012-04-02/dow-chemical-to-close-five-plants-on-slower-european-economy-2-.html> (accessed 30.01.2016).
- [12] Kharitonovich, S. A., Garina, E. P., Andryashina, N. S. 2015. Efficiency innovation in business through process approach. *Bulletin of Minin University*, 3 (11): 10.
- [13] Khasuntsev, I. M. 2014. *Formation and development of brunch innovative systems in Russian economic: PhD thesis/ State University of Management*. Moscow, p. 181
- [14] Kuznetsov, V. P., Andryashina, N. S. 2013. The main tendencies of innovative activities development in auto making. *Chuvash University Reporter*, 4-1: 278-285.
- [15] Kuznetsova, S. N. 2012. Business mechanisms development and industrial parks formation: synopsis of the thesi candidate of economic science. Ivanovo State University, Ivanovo, p. 24
- [16] Onuchak, V. A. 2008. *Regional peculiarities of support system and development for small business: PhD thesis All-Russian State Financial Ministry Academy of Russian Federation*. Moscow, p. 31
- [17] Romanovskaya, E. V., Garin, A. P., Dalidovich, K. N. 2015. The features of the process of managerial decision-making in the enterprise. *Bulletin of Minin University*, 3 (11): 7-18.
- [18] Romanovskaya, E. V., Semakhin, E. A., Andryashina, N. S. 2014. Lean manufacturing managerial system in auto making industry. *Acute Problems of Humanitarian and Natural Science*, 4-1: 264-267
- [19] Shi, H., Chertow, M., Song, Y. 2010. Developing country experience with eco-industrial parks: a case study of the Tianjin Economic-Technological Development Area in China. *Journal of Cleaner Production*, 18: 191-199
- [20] Shushkina, M. A. 2013. *Auto making industry development based on industrial partnership strategy: Doctoral thesis/ Penza State University*. Penza, p. 45

## External Influences for Balance of Trade in Small and Open Economies

Giedre DZEMYDAITE

Faculty of Economics, Vilnius University<sup>6</sup>, Lithuania

[giedre.dzemydaite@ef.vu.lt](mailto:giedre.dzemydaite@ef.vu.lt)

### Suggested Citation:

Dzemydaite, G. 2017. External influences for balance of trade in small and open economies. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 402 – 412.

### Abstract:

This paper aims to analyze peculiarities of balancing the trade in small and open economies and to identify main external and internal influences that shape the structure and volumes of international trade. The case of the three Baltic States was selected. Overall, 62 economic indicators that reflect the situations inside countries, also situation in main trading partners' countries were involved in the research. Multidimensional data analysis methods were applied to get most information from the data. This research supports the idea that external factors tend to influence the intensity of international trade rather than higher surplus or lower deficit of international trade in small and open economies, as they affect both imports and exports in highly common way. Internal factors and foreign direct investments seem to be those that notably drive structural changes for balancing the international trade. From economic policy perspective it is a discussion where to put more emphasis – on expanding linkages with foreign countries or on investing in innovative activities and quality of resources for stronger trading positions in global markets.

**Keywords:** balance of trade; international trade; imports; exports; small and open economies; Baltic States; factor analysis

**JEL Classification:** C20; C38; F14; F41.

### Introduction

There is growing interest in information related with a balance of trade and current account, as it is used in a way to determine the health of economy and its relationship with the rest of the world (Kang and Shambaugh 2016, Akbas and Lebe 2016, Topalli and Dogan 2015, IMF 2009). There are countries that survive with a negative balance a lot of years, because a current account deficit is not large compared to the national income and wealth. However, if a current account deficit is a long term issue, the situation could become unstable.

Small and open economies, such as the Baltic States, tended to have negative balance of trade several years, but situation has changed with decreasing deficit or surplus reached after the global financial crisis of 2007-2009. Some questions of interest arise from this data. Firstly, the situation of international trade tends to be different in small and open economies that are in the same geographical area. Secondly, trade surplus in these economies emerges after the global financial crisis, when economic situation in local and foreign markets did not prosper. These questions are not precisely studied in recent studies.

Many recent studies have focused on the current account imbalances and its changes during the global financial crisis (Kang and Shambaugh 2016, Akbas and Lebe 2016, Trachanas and Katrakilidis 2013, Kumhof and Laxton 2013), as well as, exchange rates impact on balance of trade in wider territorial units (Bajo-Rubio *et al.* 2016, Nieminen and Junttila 2016, Mirdala 2015, Zhang and MacDonald 2014). Export side issues, for *e.g.* export competitiveness (Kalendiene 2014, Benkovskis 2012, Bruneckiene and Paltanavicius 2012), its factors (Damijan *et al.* 2011, Jakutis *et al.* 2007), behaviour and success of exporting firms (Fernandez-Ortiz *et al.* 2015, Putnins 2013, Dzemydaite *et al.* 2012, Urbonavicius and Dikcius 2010), have also been extensively studied. However, these studies focus on export side rather than on issues of balance of trade. According to that, the main focus of this research was to find out how external influences shape overall balance of international trade of goods and services in small and open economies, also taking into account internal influences. The case of the Baltic States

---

<sup>6</sup> Sauletekio av. 9, II building, Vilnius, Lithuania



was selected. Overall, 62 economic indicators were involved in the research. Factor analysis in a combination with a multiple regression was applied to get the most information from multidimensional data.

## Conclusions

This study aimed to evaluate the external influences for the balance of trade in small and open economies. The case of the Baltic States was selected. As various research focus on export side, as export competitiveness and its factors, far little attention is given to evaluate what influence comparative changes in balance of trade that suppose to reveal the overall situation of countries' capabilities and challenges. Separate analysis of imports' and exports' were carried out for all the Baltic States to get insight to the balance of trade. Overall 62 indicators of trading partners and countries' resources were involved in the research. As time series of data were not comparatively long, only the most influential indicators were involved in the final analysis. Factor analysis and regression analysis of latent factors were applied to get the most information of multidimensional data.

This paper supports the idea that external influences are very important for small and open economies, but the weight of such importance is different according to countries' economic situation and business orientation. The case of Estonia revealed that if country exports more high technology and machinery products, it suppose to be less influenced by external influences and more dependent on internal resources and capabilities. Such small economies, as Latvia and Lithuania, are still very dependent on exports of intermediary goods and services, so external influences suppose noticeably higher impact on international trade.

Slightly different factors in all three Baltic States are important for reaching higher surplus or smaller deficit on international trade. In Lithuania foreign direct investments was the factor that drove international trade and contributed to a higher surplus of trade. In Latvia a high importance was of expenditures for research and development, but still it supposes not to be intensive enough to reach positive trade balance, as comparatively strong influence was from Latvia's households' priorities to consume foreign goods. The case of Estonia supposed the example how orientation to research and development, human capital in science and technology, and expenditures for education could contribute to a stronger position in international markets and slightly smaller dependency on partner's economic situations in small and open economies.

For all the countries analyzed external factors influenced the intensity of international trade rather than higher surplus or lower deficit of international trade, as they seemed to affect both imports and exports in highly common way. Internal factors and foreign direct investments were those that notably drove structural changes for balancing the international trade.

To develop better positions in international trade and to be less influences with external demand shocks, governments of such small and open economies as the Baltic States have to think not only about programs enhancing contacts with external partners for trade, but also to develop programs to enhance innovative activities and to invest in human capital in science and technologies, education, as well as, in high-tech and knowledge intensive sectors for better positions in international markets.

## References

- [1] Akbas, Y. E., Lebe, F. 2016. Current Account Deficit, Budget Deficit and Savings gap: is the twin or triplet deficit hypothesis valid in G7 countries? *Prague Economic Papers*, 25(3): 271-286. DOI: 10.18267/j.pep.565
- [2] Bajo-Rubio, O., Berke, B., Esteve, V. 2016. The Effects of Competitiveness on Trade Balance: The Case of Southern Europe. *Economics – the open Access – assessment e-journal*, 10: 1-27. DOI: 10.5018/economics-ejournal.ja.2016-30
- [3] Benkovskis, K. 2012. Competitiveness of Latvia's exporters, *Baltic Journal of Economics*, 12: 17–45. DOI: 10.1080/1406099X.2012.10840516
- [4] Bineau, Y. 2016. Effect of Real Exchange Rate on Trade Balance: Commodity Level Evidence from Turkish Bilateral Trade Data. *Procedia Economics and Finance*, 36(2): 895. DOI: 10.1016/S2212-5671(16)30221-0
- [5] Bruneckiene, J., Paltanavicius, D. 2012. Measurement of Export Competitiveness of the Baltic States by Composite Index. *Engineering Economics*, 23(1): 50-62. DOI: 10.5755/j01.ee.23.1.1218

- [6] Cebi, C., Culha, A. A. 2014. The effects of government spending shocks on the real exchange rate and trade balance in Turkey. *Applied Economics*, 46(26): 3151-3162. DOI: 10.1080/00036846.2014.922673
- [7] Cekanavicius, V., Murauskas, G. 2009. *Statistics and its application III*. Vilnius. ISBN: 978-9955-879-91-6
- [8] Damijan, J. P., Rojec, M., Ferjancic, M. 2011. The Growing Export Performance of Transition Economies: EU Market Access versus Supply Capacity Factors. *Panoeconomicus*, 2011(4): 489-509. DOI: 10.2298/PAN1104489D
- [9] Dzemydaite, G., Dzemyda, I., Jurgelevicius, A. 2012. Evaluation of implementation of national export development strategy: case study of the republic of Lithuania. *Intellectual Economics*, 6(1): 776-797.
- [10] Eun, S. C., Resnick B. G., Sabherwal S. 2012. *International Finance*. Sixth Edition. NY: The MacGraw-Hill. ISBN: 978-0071316972
- [11] Fernandez-Ortiz, R., Ortiz, J. A., Emeterio, M. C. S. 2015. Factors That Foster Export Commitment: an Empirical Study in Small and Medium-Sized Enterprises. *Engineering economics*, 26(3): 272-283. DOI: 10.5755/j01.ee.26.3.6456
- [12] Jakutis, A., Liukaitis, R., Samulevicius, J. 2007. Analysis of the factors of export development of Lithuania. *Technological and Economic Development of Economy*, 13(4): 272-279. DOI: 10.1080/13928619.2007.9637812
- [13] Kalendiene, J. (2014). Assessment of Lithuanian Export Competitiveness in EU Market. *Applied Economics: Systematic Research*, 8(1): 67-77. DOI: 10.7220/AESR.1822.7996.2014.8.1.4
- [14] Kang, J. S., Shambaugh, J. C. 2016. The rise and fall of European current account deficit. *Economic Policy*, 31(85): 153-199. DOI: 10.1093/epolic/eiv018
- [15] Kumhof, M., Laxton, D. 2013. Fiscal deficits and current account deficits. *Journal of Economic Dynamics & Control*, 37(10): 2062-2082. DOI: 10.1016/j.jedc.2013.05.001
- [16] Laskiene, D. 2010. Impact of FDI on a host country's foreign trade: a case of Lithuania. *Economics and Management*, 2010(15): 140-144.
- [17] Geamănu, M. 2015 Analysis of the trade balance of the enterprises with foreign direct investment in Romania. Emerging markets queries in finance and business. *Procedia Economics and Finance*, 32: 952-958. DOI: 10.1016/S2212-5671(15)01553-1
- [18] Mirdala, R. 2015. Real Exchange Rates, Current Accounts and Competitiveness Issues in the Euro Area. *Journal of Applied Economic Sciences*, Volume X, 7(37): 1093-1124.
- [19] Nieminen, M., Junntila, J. 2016. Short-Run Dynamics of the Trade Balance in the Emu-12 Countries. *Manchester School*, 84(S1): 56-83. DOI: 10.1111/manc.12160
- [20] Putnins, T. J. 2013. Exporting by Latvian companies: vitality, drivers of success, and challenges. *Baltic Journal of Economics*, 13(2): 5-35. DOI: 10.1080/1406099X.2013.10840531
- [21] Redding, S., Venables, S. J. 2004. Economic Geography and International Inequality. *Journal of International Economics*, 62(1): 53-82. DOI: 10.1016/j.jinteco.2003.07.001
- [22] Topalli, N., Dogan, I. 2016. The structure and sustainability of current account deficit: Turkish evidence from regime switching. *Journal of International Trade and Economic Development*, 25(4): 570-589. DOI: 10.1080/09638199.2015.1090472
- [23] Trachanas, E., Katrakilidis, C. 2013. The dynamic linkages of fiscal and current account deficits: New evidence from five highly indebted European countries accounting for regime shifts and asymmetries. *Economic Modelling*, 31:502-510. DOI: 10.1016/j.econmod.2012.12.026

- [24] Urbonavičius, S., Dikcius, V. 2010. Export barriers during the periods of growth and recession: the major factors and propositions. *Argumenta Oeconomica*, 24(1): 31-47. Available at: [http://argumentaoeconomica.pl/dokumenty/24.2010/33\\_24.2010Argumenta\\_Oeconomica\\_24\\_2010.pdf](http://argumentaoeconomica.pl/dokumenty/24.2010/33_24.2010Argumenta_Oeconomica_24_2010.pdf)
- [25] Wang, C.H, Lin, C. H A, Yang, C. H 2012. Short-run and long-run effects of exchange rate change on trade balance: Evidence from China and its trading partners. *Japan and World Economy*, 24(4): 266-273. DOI: 10.1016/j.japwor.2012.07.001
- [26] Zhang, G. F, MacDonald, R. 2014. Real Exchange Rates, the Trade Balance and Net Foreign Assets: Long-Run Relationships and Measures of Misalignment. *Open Economic Review*, 25(4): 635-653. DOI: 10.1007/s11079-013-9294-4
- \*\*\* IMF 2009. *Sixth edition of the IMF's balance of payments and international investment position manual (BPM6)*. Washington, DC: International Monetary Fund.

## Analysis of the Impact of Integration Processes on the Formation of Regional Investment Programs

Olga Maksimovna TSYBIKDORZHIEVA  
East Siberia State University of Technology and Management, Ulan-Ude, Russia  
[tsibikdorzhieva756@yandex.ru](mailto:tsibikdorzhieva756@yandex.ru)

Victor Georgievich BELOMESTNOV  
East Siberia State University of Technology and Management, Ulan-Ude, Russia  
[b\\_v\\_g02@list.ru](mailto:b_v_g02@list.ru)

### Suggested Citation:

Tsybikdorzhieva, O.M., Belomestnov, V.G. 2017. Analysis of the impact of integration processes on the formation of regional investment programs. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 413 – 421.

### Abstract:

The study represents a new approach to programming the regions' economic development management. In contrast to the modern approach to problem-oriented system of forecasting, strategic planning and management, which is based on the target prediction of specific meanings of development indicators, the suggested approach will allow establishing the ratio between the development of the main sectors of economy and the benchmarks for development indicators with the corresponding resource reinforcement in the form of innovative projects, i.e. the transition to project-program system of managing the region's development. The results of the study contribute to the optimization of the regional policy on enhancing the efficiency of using the regional investment programs as an integration factor of the region's economic development. The given approach determines the basic factors of the region's investment policy development, and can serve as a guide in the process of formation and realization of the regional economic development. It can be used to develop a strategy and a program for socio-economic development of Russia's regions.

**Keywords:** regional investment programs; target investment programs; investment policy; investment climate

**JEL Classification:** H54; H59; O20

### Introduction

Regional investment programs are among the most effective tools for managing the economy of the region. This topic is extremely relevant, but at the same time, it has been understudied before. At the moment, there is no precise definition of regional investment programs. Regional investment programs are also among the most important conditions for the even development of problem territories, as well as for the fairly prompt solution of problematic issues.

The advantage of the suggested approach to the theory of the regional development with the help of regional investment programs is to understand the need to strengthen the integration processes in the economic and political spheres of the country, as well as the sustainable development of all regions according to their specialization, both in domestic and international division of labor, based on the resource potential and competitive advantages. This makes it possible to determine that investments in general and regional investment programs in particular are among the essential components of economic development in the regions with a low potential of the investment climate development.

## Conclusion

A successful resolution of problematic issues is possible only if there is coordinated cooperation between the state and its regions.

Thus, the main objectives of the territorial development strategy lie in strengthening the integration processes in the economic and political space of the country, as well as in the sustainable development of all regions, in accordance with their specialization, in both Russian and international division of labor, based on resource potential and competitive advantages. Identification and definition of strategic approaches to the solution of issues connected with modernization of economy play a crucial role in developing the concepts of managing the investment activities of the regions.

## Acknowledgement

The study is funded by the Federal State Budgetary Educational Institution of Higher Professional Education "East Siberia State University of Technology and Management" within the framework of the University's grant for young scholars.

## References

- [1] Alexeyev, S. 2016. Low infrastructural development prevents the attraction of investors to Buryatia REGNUM News Agency. Available at: <https://regnum.ru/news/economy/2192179.html?t=1476344682>
- [2] Anikin, A. V. 1975. Thomas Mann: Trade Strategist. In: *Youth Science: The Life and Ideas of the Economists before Marx*. 2<sup>nd</sup> Edition. Moscow: Politizdat, pp. 42-46.
- [3] Blaug, M. 2008. Quesnay, François. In: *100 Great Economists before Keynes: An introduction to the lives & works of one hundred great economists of the past*. St Petersburg: Economicus, The School of Economics Library, vol. 42, pp. 128-130.
- [4] Borisov, A. B. 2003. *Large Dictionary of Economics*. Moscow: Knizhny Mir.
- [5] Montchrestien, Antoine 1615. *Traite d'economie politique*. Broché – 1999. ISBN-10: 260000338X; 978-2600003384
- [6] Smith, A. 2007. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Moscow: Eksmo. Series: Anthology of Economic Thought. Available at: [https://www.ibiblio.org/ml/libri/s/SmithA\\_WealthNations\\_p.pdf](https://www.ibiblio.org/ml/libri/s/SmithA_WealthNations_p.pdf)
- [7] Zhapov, V. 2016. Buryatia and Inner Mongolia, CHINA, to develop investment projects in the field of agriculture. Inform-polis. Available at: <http://www.infpol.ru/news/agriculture/119412-buryatiya-i-vnutrennyaya-mongoliya-kr-budut-razvivat-investitsionnye-proekty-v-oblasti-selskogo-kho//>
- \*\*\* Analytical materials 2016. Ministry of Industry and Trade of the Republic of Buryatia, Available at: <http://minpromtorg.govrb.ru/industry/analytical-materials>
- \*\*\* Inform-Polis. 2016. The Head of Buryatia signed agreements with investors for 7 billion rubles. Available at: <http://www.infpol.ru/news/society/116302-glava-buryatii-podpisal-soglasheniya-s-investorami-na-7-mlrd-rublej//>
- \*\*\* Investment climate 2016. Investment Portal of the Republic of Buryatia. Available at: <http://invest-buryatia.ru/index/investiczionnaya-politika/investiczionnyj-klimat.html>
- \*\*\* Investment projects of the Republic of Buryatia 2016. Committee of Tourism of the Ministry of Economy of the Republic of Buryatia. Available at: <http://www.baikaltravel.ru/agency-for-tourism/investment-project>
- \*\*\* Production indexes by type of economic activity "Manufacturing Industries" (2016). Federal State Statistics Service Available at: [http://www.gks.ru/wps/wcm/connect/rosstat\\_main/rosstat/ru/statistics/enterprise/industrial/#](http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/enterprise/industrial/#)

- \*\*\* RB Law No. 669-I. 1998. Law of the Republic of Buryatia "On Investment Activity in the Republic of Buryatia" of 06.03.1998.
- \*\*\* RB Law No. 868-IV. 2009. Law of the Republic of Buryatia "On State Support of Investment Activity on the Territory of the Republic of Buryatia of 08.05.2009
- \*\*\* RF Government Resolution N 644. 2011. Resolution of the Russian Federation Government of 2 Aug 2011 "On the Federal Target Program called the Development of Domestic and Inbound Tourism in the Russian Federation (2011-2018)"
- \*\*\* RF Law 39-FZ. 1999. Federal law "On Investment Activity in the Russian Federation Carried out in the Form of Capital Investments" of February 25 1999, N. 39-FL (ed. of 12.12.2011 No. 427-FL)

## Sustainability of Bulgarian Farming Enterprises during European Union Common Agricultural Policy Implementation

Hrabrin BACHEV  
Institute of Agricultural Economics<sup>7</sup>, Sofia, Bulgaria  
[hbachev@yahoo.com](mailto:hbachev@yahoo.com)

### Suggested Citation:

Bachev, H. 2017. Sustainability of Bulgarian farming enterprises during European Union common agricultural policy implementation. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 422 – 451.

### Abstract:

This article applies a holistic framework for assessing integral, governance, economic, social, and environmental sustainability of Bulgarian farming enterprises, and assesses sustainability of holdings in general and of different juridical type, size, specialization, and ecological and geographical location. First, a hierarchical framework for assessing sustainability level of farming enterprises in Bulgarian during current stage of European Union. *Common Agricultural Policy* (CAP) implantation is presented. Second, overall, governance, economic, social, and environmental sustainability of Bulgarian farming enterprises in general and of different type are assessed, and multi-indicator, multi-criteria, multi-principle and multi-aspect and integral sustainability levels analyzed. Third, structure of farming enterprises with different sustainability level in general and of different type is analyzed. Next, diverse personal, market, institutional etc. factors for improving sustainability of Bulgarian farming enterprises are identified. Finally, directions for further research and practices in sustainability assessments in the sector are suggested.

**Keywords:** farm sustainability; governance; economic; social; environmental; Bulgaria

**JEL Classification:** Q12; Q13; Q15; Q18; Q2; Q3; Q5

### Introduction

Assessment of sustainability of diverse type of farming enterprises is among the most topical academic and practical (business and policies forwarded) issues as: Andreoli and Tellarini (2000), Bachev (2005, 2009, 2010, 2011, 2013, 2016) Bachev and Petters (2005), Bastianoni *et al.* (2001), Brklacich *et al.* (1991), EC (2001), FAO (2012), Fuentes (2004), Hani *et al.* (2006), OECD (2001), Rigby *et al.* (2001), Sauvenier *et al.* (2015), UN (2015). Nevertheless, there are no comprehensive studies on sustainability of Bulgarian farming enterprises at current stage of EU CAP implementation. This article applies a holistic framework for assessing integral, governance, economic, social, and environmental sustainability of Bulgarian farming enterprises, and assesses sustainability of holdings in general and of different juridical type, size, specialization, and ecological and geographical location.

First, a hierarchical framework for assessing sustainability level of farming enterprises in Bulgarian is presented. Second, assessment is made on overall, governance, economic, social, and environmental sustainability of Bulgarian farming enterprises of different type based on a 2016 survey with managers of 190 typical holdings. Analysis comprises multi-indicator, multi-criteria, multi-principle, multi-aspect and integral assessment of sustainability levels in general and for each category of enterprises classified by juridical type, size, specialization, and location. Third, structure of farming enterprises with different sustainability level in general and of different type is analyzed. Next, factors for improving governance, economic, social and environmental sustainability of Bulgarian farming enterprises are identified. Finally, directions for further research and practices in sustainability assessments in the sector are suggested.

---

<sup>7</sup> 125 Tzarigradsko shose Blvd, Blok 1, 1113 Sofia, Bulgaria



## Conclusion

Our survey includes “typical” and to a certain extent “sustainable” (perspective) farming enterprises, which means that sample level is higher than the real (average) for the country. Despite that undertaken first large-scale study on sustainability of Bulgarian farming enterprises let us make important conclusions about the level of enterprises sustainability in the country, and recommendations for managerial and assessment practices.

Suggested holistic framework gives a possibility to improve assessment, analysis and management of sustainability of individual enterprises and holdings of different type in general and for major aspects, principles, criteria and indicators of governance, economic, social and environmental sustainability. That approach has to be further discussed, experimented, improved and adapted to the specific conditions of operation and development of farming enterprises of different type, subsector of production, geographical region and ecosystem as well as the special needs of decision-makers at various levels.

Overall sustainability of Bulgarian farming enterprises is at a good level, with superior levels for environmental and social sustainability, and inferior level for governance and economic sustainability. Thus improvement of the latter two is critical for maintaining sustainability of Bulgarian holdings. Governance and economic sustainability of Bulgarian farming enterprises are low because of the fact that Governance Efficiency and Financial Stability of holdings are low. Furthermore, low Comparative Efficiency of Supply of Short-term Inputs in relations to alternative organizations, and unsatisfactory Profitability of Own Capital and Overall Liquidity of farms, determine the latter. Simultaneously despite that the overall environmental sustainability is relatively high, Preservation of Agricultural Lands and Biodiversity are relatively low and critical for maintaining the achieved level. Insufficient Application of Recommended Irrigation Norms, a high level of Soils Water Erosion, and lowered Number of Wild Animals on farm territory, determines the latter inferior levels.

There are great variations in sustainability levels of enterprises of different type and location as well as in shares of enterprises with unlike level of sustainability. Distribution of farming enterprises of different type in groups with diverse levels of sustainability has to be taken into account when forecast the number and importance of holdings of each kind, and modernize public (structural, sectorial, regional, environmental, etc.) policies for supporting agricultural producers of certain type, sub-sectors, eco-systems and regions of the country.

Factors which stimulate to the greatest extent the actions of Bulgarian enterprises for improving individual aspects of sustainability are quite distinct, but the most important are: Access to Advisory Services, Professional Training of Manager and Hired Labor, Personal Conviction and Satisfaction, Positive Experience of Other Farms, Available Innovations, Financial Capability, Private Contracts and Agreements, and Registration and Certification of Products, Services, etc., Market Demand and Prices, Received Direct State Subsidies, Market Competition, Participation in Public Support Programs, Possibilities for Benefits in Present Moment, Possibilities for Benefits in Near Future, Tax Preferences, Possibilities for Benefits in Distant Future, Integration with Buyer of Product, Social Recognition of Contribution, Immediate Benefits for Other Persons and Groups, Community Initiatives and Pressure in Region, Policies of European Union, Existing Problems and Risks in Region, Existing Problems and Risks in Global Scale, Official Regulations, Standards, Norms, etc. All these specific incentives for Bulgarian farming enterprises as a whole and of different type have to be taken into account in improving public policies and programs of sustainable development.

National and European mechanisms of regulation and support, which affect to the greatest extent economic sustainability of the most Bulgarian farming enterprises are: Direct Area Based Payments, National Tops Ups for Products, Livestock, etc., Modernization of Agricultural Holdings, Green Payments, Support to Semi-market Farms. Impacts of national and European policies on governance, social and environmental sustainability of Bulgarian farming enterprises is relatively weak. There are strong differentiations in impacts of individual policy instruments on sustainability of enterprises of different type and location.

Having in mind the importance of holistic assessments of sustainability of farming enterprises and their enormous benefits for farm management and agrarian policies, such studies are to be expended and their precision and representation increased. The latter require a close cooperation between all interests' parties and participation of farmers, agrarian organizations, local and state authorities, interest groups, research institutes and experts, etc.

Moreover, the precision of estimates has to be improved and besides on assessments of managers to incorporate relevant information from field tests and surveys, statistical and other data, and expertise of professionals in the area.

## References

- [1] Andreoli, M., and Tellarini, V. 2000. Farm sustainability evaluation: methodology and practice. *Agriculture, Ecosystems & Environment*, 77(1–2): 43–52. Available at: [http://dx.doi.org/10.1016/S0167-8809\(99\)00091-2](http://dx.doi.org/10.1016/S0167-8809(99)00091-2)
- [2] Bachev, H. 2013b. Management Strategies for Conservation of Natural Resources in Agriculture. *Journal of Advanced Research in Law and Economics*, Volume IV, Issue 1(7): 4-45.
- [3] Bachev, H. 2011. Water Governance in Bulgarian Agriculture, in A. Baba, G. Tayfur, O. Gunduz, K. Howard, M. Friedel, and A. Chambel (Editors), *Climate Change and its Effects on Water Resources. Issues of National and Global Security*, Springer Science+Business Media B.V., 215-224.
- [4] Bachev, H. 2013a. Risk Management in Agri-food Sector. *Contemporary Economics*, 7(1): 45-62. Available at: <http://dx.doi.org/10.5709/ce.1897-9254.73>
- [5] Bachev, H. 2005. *Assessment of Sustainability of Bulgarian Farms*, proceedings, XI<sup>th</sup> Congress of the European Association of Agricultural Economists, Copenhagen. Available at SSRN: <https://ssrn.com/abstract=903501> or <http://dx.doi.org/10.2139/ssrn.903501>
- [6] Bachev, H. 2009. Mechanisms of Governance of Sustainable Development. *Journal of Applied Economic Science*, 4(2): 169-184.
- [7] Bachev, H. 2013. A Holistic Approach for Assessing the System of Governance of Agrarian Sustainability. *Journal of Economic and Social Thought* 3(3). Available at: [www.kspjournals.org](http://www.kspjournals.org)
- [8] Bachev, H. 2016a. A Framework for Assessing Sustainability of Farming Enterprise. *Journal of Applied Economic Sciences*, 9(39): 24-43.
- [9] Bachev, H. 2016b. Defining and Assessing the Governance of Agrarian Sustainability. *Journal of Advanced Research in Law and Economics*, 7(18): 797-816.
- [10] Bachev, H., and Peeters, A. 2005. Framework for Assessing Sustainability of Farms. *Farm Management and Rural Planning*, 6: 221-239.
- [11] Bastianoni, S, Marchettini, N., Panzieri, M., Tiezzi, E. 2001. Sustainability assessment of a farm in the Chianti area (Italy). *Journal of Cleaner Production*, 9(4): 365–373. Available at: [http://dx.doi.org/10.1016/S0959-6526\(00\)00079-2](http://dx.doi.org/10.1016/S0959-6526(00)00079-2)
- [12] Brklacich, M., Bryant, C., and Smith, B. 1991. Review and appraisal of concept of sustainable food production systems. *Environmental Management*, 15(1):1-14. Available at: <http://dx.doi.org/10.1007/BF02393834>
- [13] Fuentes, M., 2004. *Farms Management Indicators Related to the Policy Dimension in the European Union*, OECD Expert Meeting on Farm Management Indicators and the Environment, 8-12 March 2004, New Zealand.
- [14] Häni, F., Pintér, L., and Herren, H. 2006. *Sustainable Agriculture. From Common Principles to Common Practice*, Proceedings of the first Symposium of the International Forum on Assessing Sustainability in Agriculture (INFASA), March 16, 2006, Bern, Switzerland.
- [15] Hansen, J. 1996. Is Agricultural Sustainability a Useful Concept. *Agricultural Systems*, 50: 117-143. Available at: [http://dx.doi.org/10.1016/0308-521X\(95\)00011-S](http://dx.doi.org/10.1016/0308-521X(95)00011-S)
- [16] Rigby, D., Woodhouse, P., Young, T., Burton, M. 2001. Constructing a farm level indicator of sustainable agricultural practice. *Ecological Economics*, 39(3): 463–478, Available at: [http://dx.doi.org/10.1016/S0921-8009\(01\)00245-2](http://dx.doi.org/10.1016/S0921-8009(01)00245-2)

- [17] Sauvenier, X., Valekx, J., Van Cauwenbergh, N., Wauters, E., Bachev, H., Biala, K., Biolders, C., Brouckaert, V., Garcia-Cidad, V., Goyens, S., Hermy, M., Mathijs, E., Muys, B., Vanclooster, M., and Peeters, A. 2005. Framework for Assessing Sustainability Levels in Belgium Agricultural Systems – SAFE, Belgium Science Policy, Brussels. Available at: [https://www.belspo.be/belspo/organisation/Publ/pub\\_ostc/CPagr/rapp\\_CP28\\_en.pdf](https://www.belspo.be/belspo/organisation/Publ/pub_ostc/CPagr/rapp_CP28_en.pdf)
- [18] VanLoon, G., Patil, S., and Hugar, L. 2005. *Agricultural Sustainability: Strategies for Assessment*. London: SAGE Publications India Pvt Ltd, New Delhi, pp.281. ISBN: 0761933409
- \*\*\* Agriculture and Rural Development, European Commission.
- \*\*\* EC 2001.A Framework for Indicators for the Economic and Social Dimensions of Sustainable
- \*\*\* FAO (2013): SAFA. Sustainability Assessment of Food and Agriculture systems indicators, FAO.
- \*\*\* OECD, 2001. Environmental indicators for agriculture. Volume 3: Methods and Results. OECD, Paris.
- \*\*\* UN (2015): Transforming our world: the 2030 Agenda for Sustainable Development, United Nations Resolution A/RES/70/1 of 25 September 2015.

## Software Development for Performance Measurement Evaluation of Road Transport Activity

György KOVÁCS

University of Miskolc, Faculty of Mechanical Engineering and Informatics

Institute of Logistics, Hungary

[altkovac@uni-miskolc.hu](mailto:altkovac@uni-miskolc.hu)

Sebastian KOT

The Management Faculty, Czestochowa University of Technology, Poland

Faculty of Economic Sciences and IT, Department of Entrepreneurship,

North-West University, South Africa

[sebacat@zim.pcz.czest.pl](mailto:sebacat@zim.pcz.czest.pl)

### Suggested Citation:

Kovács, G., Kot, S. 2017. Software development for performance measurement evaluation of road transport activity. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 452 – 462.

### Abstract:

Key performance indicators (KPI) are frequently used in general business to evaluate the success of the entire enterprise. KPIs play a key role in helping an organization to define and measure its progress towards the defined goals. Structure of logistics indicators should be defined which can be used for evaluation of the transport activity of a forwarding company. Evaluation of logistics indicators relating to forwarding activity can provide useful information because the analysis of historic data provides a real view of the company activity. If we can measure the performance of processes, we can improve it in the future.

The goal of this study is the performance measurement of road transport activity. At first we elaborated the structure of transport indicators /time utilization, transport way utilization, weight of transported freight, fuel usage relating to vehicles and transport trips/ which are our own results.

This research is absolutely original and unique, especially that based on the elaborated structure of transport indicators, an evaluation software was developed which will be also introduced in this paper. This software was implemented successfully at a forwarding company.

**Keywords:** key performance indicator; time utilization; transport way utilization; fuel usage

**JEL Classification:** L92 ; R42 ; L86

### Introduction

A key performance indicator (KPI) is a type of performance measurement. Key performance indicators are frequently used in every part of our life and in general business to evaluate the efficiency of activities (Gudehus and Kotzab 2009, Arvis *et al.* 2014). In this paper the main focus will be the transportation activity because it is one of the most expensive logistic processes. Road transport is the most significant transport mode because of the 78% of the total transport volume is the road transport in Europe.

Flexible production (or service) and logistics is needed to answer the demands of the rapidly changing economics and dynamic customer demands. The development of business processes can be realized only by high transparency and by the continuous monitoring of the efficiency of the systems. If we can measure the actual performance of processes, we can improve it in the future. Evaluation of logistics indicators can provide useful information because the analysis of historic data provides a real view of the company activity. These data provided by the own developed software can help the strategic decision making of general management, optimization of transport processes and making short and long term operative plans.

## Conclusions

A key performance indicator (KPI) is a type of performance measurement. The performance of activities can not be improved unless it can be measured. Evaluation of logistics indicators relating to forwarding activity can provide useful information about the activity of the company.

The goal of this study was the performance measurement of road transport activity. At first we elaborated the structure of transport indicators /time utilization, transport way utilization, weight of transported freight, fuel usage relating to vehicles and transport trips. This research is absolutely original and unique, especially that based on the elaborated structure of transport indicators, an evaluation software was developed.

Our software was developed especially for SMEs; which enterprises can not invest in expansive ERP systems. Based on the customer demands we elaborated the structure of KPIs, which are necessary and enough to strategic decision making of general management, optimization of transport processes and making short and long term operative plans. Further advantage of our software that absolutely fit to the customer demands and very cost effective. The developed software was implemented successfully at the forwarding company; other enterprises are also interesting on this software.

Recently we are working on implementation of further indicators into the software which can be provide more precise and detailed evaluation of the transport activity. Our plan for the future is to develop an "expert system" module for the software which can make suggestions automatically after the evaluation of transport activity.

## References

- [1] Anbuudayasankar, S. P., Ganesh, K., and Mohapatra, S. 2014. *Models for Practical Routing Problems in Logistics. Design and Practices*. Springer International Publishing. DOI: 10.1007/978-3-319-05035-5
- [2] Arvis, J. F., Saslavsky, D., Ojala, L., Shepherd, B., Busch, C., Raj, A. 2014. *Connecting to compete 2014: trade logistics in the global economy*. The logistics performance index and its indicators, The International Bank for Reconstruction and Development, The World Bank, Washington 1(1). Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/20399/904190WP0LP10R00Box385316B00PUBLIC0.pdf?sequence=1&isAllowed=y>
- [3] Augustyniak, W. 2014. Efficiency change in regional airports during market liberalization. *Economics and Sociology*, 7(1): 85-93.
- [4] Birge, J. R., and Linetsky, V. 2007. *Handbooks in Operations Research and Management Science*. Volume 15. p. 1-1014 (2007). Financial Engineering. ISBN: 978-0-444-51781-4
- [5] Bokor, Z. 2005. Az intermodális logisztikai szolgáltatások helyzetének értékelése, fejlesztési lehetőségeinek feltárása. (Evaluation of intermodal logistics services, development possibilities.) (In Hungarian). *BME OMIKK Logisztika*, 10(3): 22-65.
- [6] Caramia, M., and Dell'Olmo, P. 2008. *Multi-objective Management in Freight Logistics, Increasing Capacity, Service Level and Safety with Optimization Algorithms*. Springer-Verlag London. ISBN: 978-1-84800-382-8
- [7] Cook, W. D., and Zhu, J. 2005. *Modeling performance measurement*. Springer US. ISBN: 978-0-387-24138-8. DOI: 10.1007/b104529
- [8] Duma, L. 1999. The measurement of the performance of freight transportation. *Periodica Polytechnica Ser. Transp. Eng.*, 27(1-2): 83-92.
- [9] Ehmke, J. F. 2012. *Integration of Information and Optimization Models for Routing in City Logistics*. Springer-Verlag New York. ISBN: 978-1-4614-3628-7. DOI: 10.1007/978-1-4614-3628-7
- [10] Grabara, J., Man, M., Kot, S. 2013. Costs incurred by designing and implementing the logistical projects in the activity of companies. *Applied Mechanics and Materials*, 309: 221-228.

- [11] Gubán, M., Gubán, Á. 2001. Egy fuvarozási vállalat szállítmányozási feladatának matematikai modellje és tervezett megoldási algoritmus. (Mathematical model and algorithm for transport activity of a forwarding company.) (In Hungarian), In: Késleltetett összeszerelő üzemek logisztika orientált optimális telepítését befolyásoló tényezők és a telepítés heurisztikus algoritmus. (Influencing parameters and heuristic algorithm for optimal logistic oriented establishing of delayed assembling plants.) (In Hungarian), (Eszes István (Ed)), 226-235, Budapest Business School.
- [12] Gudehus, T., and Kotzab, H. 2009. *Comprehensive Logistics*. Springer-Verlag Berlin Heidelberg.
- [13] Karcz, J., Ślusarczyk, B. 2016. Improvements in the quality of courier delivery, *International Journal for Quality Research*, 10(2): 355-372.
- [14] Kot, S. 2015. Cost structure in relation to the size of road transport enterprises, *Promet - Traffic - Traffico*, 27(5): 387-394.
- [15] Ross, D. F. 2015. *Distribution Planning and Control*. Springer US. DOI: 10.1007/978-1-4899-7578-2
- [16] Schmitz, J., Platts K. W. 2004. Supplier logistics performance measurement: Indications from a study in the automotive industry. *International Journal of Production Economics*, 89: 231-243.
- [17] Simchi-Levi, D. Xin, and Chen. Bramel, J. 2014. *The Logic of Logistics, Theory, Algorithms, and Applications for Logistics Management*. Springer-Verlag New York. DOI: 10.1007/978-1-4614-9149-1
- [18] Sinha, K. C., Labi, S. 2007. *Transportation decision making*. John Wiley & Sons Inc. DOI: 10.1002/9780470168073
- [19] Ślusarczyk, B. 2014. Logistics costs measurement at enterprises. *Economic Annals XXI*, 11-12: 97-100.
- [20] Stefko, R., Gavurova, B., and Korony, S. 2016. Efficiency measurement in healthcare work management using Malmquist indices. *Polish Journal of Management Studies*, 13(1): 168-180.
- [21] Thamrin, H. M. 2016. From goal orientation to manager performance: A case on managers of shipping company in Indonesia. *Polish Journal of Management Studies*, 13(2): 175-18
- \*\*\* Fraunhofer Institute 2015. Executive summary. Available at: <https://www.fraunhofer.de/content/dam/zv/de/ueberfraunhofer/Nachhaltigkeitsbericht2015/Nachhaltigkeitsbericht-2015-Executive-Summary.pdf> (accessed Sept. 15, 2016).
- \*\*\* Scmwiki 2016. Transportation metrics. Available at: <https://scmwiki2012.wordpress.com/r/transportation-metrics> (accessed July 15, 2016).

## Ensuring Sustainable Development of the Regional Passenger Transport Systems on the Basis of Economically Sound Tariffs for Transportation Services (a Case Study of Krasnoyarsk Krai)

Irina L. GOLYAND

Siberian Federal University, Institute of Economics and Business Processes Management  
Department of Economy and Organization of Enterprises of Energy and Transport Sectors  
Krasnoyarsk, Russian Federation  
[golyandi@mail.ru](mailto:golyandi@mail.ru)

Kseniya A. MUKHINA\*

Siberian Federal University, Institute of Economics and Business Processes Management  
Department of Economy and Organization of Enterprises of Energy and Transport Sectors  
Krasnoyarsk, Russian Federation  
[kmukhina@sfu-kras.ru](mailto:kmukhina@sfu-kras.ru)

Kirill N. ZAKHARIN

Siberian Federal University, Institute of Economics and Business Processes Management  
Department of Economy and Organization of Enterprises of Energy and Transport Sectors  
Krasnoyarsk, Russian Federation  
[kzakharyin@sfu-kras.ru](mailto:kzakharyin@sfu-kras.ru),

Jriy A. HEGAI

Siberian Federal University, Institute of Economics and Business Processes Management  
Department of Economy and Organization of Enterprises of Energy and Transport Sectors  
Krasnoyarsk, Russian Federation  
[hegaiy@yandex.ru](mailto:hegaiy@yandex.ru)

### Suggested Citation:

Golyand, I. L., Mukhina, K. A., Zakharin, K. N., Hegai, J. A. 2017. Ensuring sustainable development of the regional passenger transport systems on the basis of economically sound tariffs for transportation services. A case study of Krasnoyarsk Krai. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 462 – 472.

### Abstract:

The relevance of the study is determined by the need to ensure the sustainable development of local (regional) passenger transport systems located in large regions, where transport has a social significance. The basic approach to the study of this problem is a consideration of the economic security of the transport system subjects in the process of sustainable development. The economic stability of the transport system subjects is considered from the perspective of building a relationship between them by providing transport services at minimal cost and with a maximum useful effect. This condition can be achieved by using standard costs and forming economically sound tariffs for transportation services.

Using the example of road passenger transport of Krasnoyarsk Krai (the Russian Federation), the paper considers how the tariff for transport services defined with account of the maximum normative capacity of each cost item enables to ensure the balance of economic interests of transportation participants and economic security of the transport organizations, as well as to create conditions for sustainable development of the entire regional transport system.

The article information may be useful when planning and adjusting the regional transport system management and creating conditions for balanced development of the transport system.

**Keywords:** sustainable transport; economic security; economically sound tariff

**JEL Classification:** R48; R13



## **Introduction**

In the early 21<sup>st</sup> century, particular attention was given at the international level to the development of transport and increasing its responsiveness in rapidly changing economic and ecological environment (Ebinger *et al.* 2015). Today, within the framework of the theory and practice of sustainable development of economic systems the following issues are studied: availability of public and private transport in major cities, optimization of the route network utilization, search for effective models of cooperation and achievement of a balance of interests of transportation companies, government agencies and the public, on the background of the need to reduce the negative impact of transport (Ramaswami *et al.* 2016, Knez *et al.* 2014).

For any state, transport is not only an instrument of serving the national interests and granting a worthy place in the world economic system, but it is also a means of ensuring the country's efficient internal infrastructure. Sustainable transport development is a guarantee of free movement of goods and services both inside the country and abroad, providing competition and freedom of economic activity and ensuring the integrity of the state and its national security. As a consequence, it improves the conditions and standard of living of the population, and this, in turn, has an undeniable impact on the external economic activity of the country (Babkina *et al.* 2015). Transport infrastructure is the engine of urban development and prosperity in terms of accessibility and mobility (Wei *et al.* 2016, Jones *et al.* 2015).



## Conclusion

The practice established at the level of federal legislation and applicable in many regions of Russia, including Krasnoyarsk Krai, consists in the situation when the executive authorities delegate to a business entity, regardless of its organizational and legal form, the right to provide passenger transportation services and reserves the right to control its activities in terms of quality and pricing (tariff formation). This practice has been efficient in achieving the balance of economic interests. At the same time, the implementation of such measures leads to the limitation of market mechanisms. It is obvious that the effective use of compensatory mechanisms (subsidies, incentives to business entities and others) and, thereby, ensuring sustainable development of the transport system as a whole are improved in the case where there are data known about both the exact number of passengers transported using a specified tariff, and the exact values of technical and operational parameters of the bus operation: loaded run, vacant run, and others.

Given the dynamics of changes in the economic environment, the tariff model should not lag behind the development of the transport system. It is especially important to include in the tariff the costs needed for the economic security of the transport system subjects. Completeness and timeliness of cost accounting in the tariff appears here as the basic properties of the tariff model. The completeness of cost accounting determines the need for costs structure, and timeliness of accounting determines the need for sufficiency of cost in the current tariff model in order to secure the necessary economic conditions to support sustainable development of the subject in future periods.

The need for timely accounting of costs in the tariff in the context of absence of excessive profitability reflects the need to bear costs today to achieve the desired effect in the future. Perhaps the solution of this problem can be considered as a classic example of investment in transport emission mitigation measures, transport safety and the introduction of intelligent systems. The solution of all these problems involves expenditure in the current period in order to obtain a more substantial but delayed effect in the future. Achieving a conditional consent (social contract) of the transportation market participants with such a model of behavior, including the agreement to work with such a tariff model, is the subject to transport system control carried out, as a rule, at a local (regional) level.

We had considered a dynamic model of transport service tariff, which includes not only the structure and the specific amount of certain expenses, but also the operating features of the cost object, *i. e.* the bus. The use of the proposed model provides sufficient grounds for establishing specific relationships between external factors and the level of economic security of the transport system subject.

The values of some parameters of tariff models are determined based on the target indicators of performance of transportation companies. Thus, the average daily operating time of the bus on duty shall not fall below a certain value, *i. e.* the rolling stock, as an element of the active part of fixed assets, should be sufficiently used in the transportation process.

The key problem of increasing the economic security is increasing the efficiency of resource use, reducing the negative impacts of technological production processes on the environment, and personnel development.

## Acknowledgement

This article was prepared with the financial support of the Krasnoyarsk Regional Fund for Support of Scientific and Technical Activities.

## References

- [1] Al-Atawi, A. M., Kumar, R., and Saleh, W. 2016. Transportation sustainability index for Tabuk city in Saudi Arabia: An Analytic Hierarchy Process. *Transport*, 31 (1): 47-55. Available at: <http://dx.doi.org/10.3846/16484142.2015.1058857>
- [2] Babkina, T. V., Buravova, A. A., and Trembach, K. I. 2015. Specificity and interrelationship of economic security and the country's transport complex. *Science of Science*, 7(5). Available at: <http://naukovedenie.ru/pdf/182evn515.pdf>. DOI: 10.15862/182evn515

- [3] Black, W. R., and Nijkamp, P. 2002. *Social change and sustainable transport*. Indiana University Press. ISBN: 978-0-253-34067-2
- [4] Boelie, E., Geels, F. W., and Green, K. (Eds.) 2004. *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*. Edward Elgar Publishing. ISBN: 978 1 84376 683 4
- [5] Borzunov, A. A. 2014. Cluster integration as a factor of economic security in the transport sector. *Transport business in Russia*, 5: 42-46.
- [6] Ebinger, J. O., Vandycke, N., and Rogers, J. A. 2015. More climate finance for sustainable transport. *The World Bank*. No. 22296. DOI: <http://dx.doi.org/10.1596/0-8213-3598-7>
- [7] Henning, T. F. P., Muruvan, S., Feng, W. A., and Dunn, R. C. 2011. The development of a benchmarking tool for monitoring progress towards sustainable transportation in New Zealand. *Transport Policy*, 18(2): 480-488. Available at: <http://dx.doi.org/10.1016/j.tranpol.2010.10.012>
- [8] Hensher, D. A. 2007. Sustainable public transport systems: Moving towards a value for money and network-based approach and away from blind commitment. *Transport Policy*, 14(1): 98-102. Available at: <http://dx.doi.org/10.1016/j.tranpol.2006.10.004>
- [9] Jones, S., Tefe, M., Appiah-Opoku, S. 2015. Incorporating stakeholder input into transport project selection – a step towards urban prosperity in developing countries? *Habitat International*, 45: 20-28. DOI: 10.1016/j.habitatint.2014.06.017
- [10] Knez, M., Celik, A. N., and Muneer, T. 2014. A sustainable transport solution for a Slovenia town. *International Journal of Low-Carbon Technologies*, 10 (4): 386-392. DOI: 10.1093/ijlct/ctu007
- [11] Mezhokh, Z. P., and Yushkova, I. A. 2012. Questions of maintaining the level of economic security of transportation companies. *Transport Business in Russia Journal*, 6-1: 111-114.
- [12] Ramaswami, A., Russell, A. G., Culligan, P. J., Sharma, K. R., and Kumar, E. 2016. Meta-principles for developing smart, sustainable, and healthy cities. *Science*, 352(6288): 940-943. DOI: 10.1126/science.aaf7160
- [13] Tatarkin, A., Romanova, O., Kuklin, A, and Yakovlev, V. 1996. Economic security as the object of a regional study. *Economic Issues*, 6: 78-89.
- [14] Wei, H. H., Liu, M., Skibniewski, M. J., Balali, V. 2016. Conflict and consensus in stakeholder attitudes toward sustainable transport projects in China: An empirical investigation. *Habitat International*, 53: 473-484. Available at: <http://dx.doi.org/10.1016/j.habitatint.2015.12.021>
- [15] Zheng, J., Atkinson-Palombo, C., McCahill, C., O'Hara, R., and Garrick, N. 2011. Quantifying the economic domain of transportation sustainability. Transportation Research Record: *Journal of the Transportation Research Board*, 2242: 19-28. Available at: <http://dx.doi.org/10.3141/2242-03>

## Identification and Analysis the Possible Factors Obstructing a Successful Integration of Turkish Migrants in Germany

Otília ZORKÓCIOVÁ  
Faculty of Commerce  
University of Economics in Bratislava, Slovakia  
[ozorkoci@hotmail.com](mailto:ozorkoci@hotmail.com)

Lucia ĎURANOVÁ  
Faculty of Commerce  
University of Economics in Bratislava, Slovakia  
[duranovalucia@gmail.com](mailto:duranovalucia@gmail.com)

### Suggested Citation:

Zorkóciová, O., Duranová, L. 2017. Identification and analysis the possible factors obstructing a successful integration of Turkish migrants in Germany. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 472 – 481.

### Abstract:

This paper deals with identification and analyses possible factors obstructing successful integration of several generations of Turkish migrants in Germany, based on the analysis of MIPEX model, as a unique specific index for the evaluation of migration integration policy based on its score. There are already 3 generations of Turks living in Germany and their full integration of Turks is not possible due to the existence of several problematic areas, including in particular: higher unemployment rate of immigrants in comparison to locals, xenophobic attitude of majority society and immigrants' lack of education. Therefore, Germany should put more emphasis on the improvement of integration measures, which ensure the most effective immigrants' integration into majority society. German government should focus more attention on the problems in education system for the young generation of Turks and other legal immigrants in the country.

**Keywords:** immigration; turkish immigrants; integration, german integration policy, MIPEX.

**JEL Classification:** F22; O15; Z1.

### Introduction

There are relatively few phenomena as intensively intertwined with human history since its very beginning as migration. Today's world characterized by constantly increasing globalisation, accompanied on one hand by internationalisation and integration tendencies, on the other hand by deepening of discrimination and widening of socio-economic gaps among regions, countries, human societies and individuals, has brought migration phenomena into unprecedented dimensions, increasing also its socio-economic and political-security impact on the international scene.

Globalisation is an extremely complex and diverse process. Therefore, it is currently very difficult and complicated to clearly identify the direction, details of indication, and the extent of further development of this process (Kosír, Rosenberg 2007). Globalisation is associated with the world economy development, increasing importance of the global economic environment and it is a result of interaction of many trends and factors (Baláž *et al.* 2010) Migration is one of the most important trends in globalisation processes. We record the mobility of migrants which is changing the politics, demography and economy of individual countries as well as of entire regions. Migration can be characterized as a temporary or permanent movement of individuals or groups of people from one place to another, due to various reasons; from better work opportunities to persecution (Zanker 2008). It interferes with all the spheres of human communities and individuals, in their countries of origin, transits, as well as in their "dream" destinations.

Communities of many European countries affected by migration have been recently experiencing the atmosphere of so-called "moral panic" due to rising immigration tendencies and related ethnical and religious diversity. The folk theory, now used to criticize a certain version of the idea of multiculturalism, is that in the past

immigrants wanted to integrate and to look as much as possible like the natives, while now they want to preserve their identity and thus the heterogeneity of societies in the EU and the USA is increasing. As a consequence, cultural barriers to immigration, it is argued, should be strengthened (Gligorov 2006). Countries exposed to immigration pressure emphasize the importance of successful integration of immigrants. They are searching for the most acceptable ways to integrate diverse groups of migrants, characterised by different ethnicity and cultural background, into the majority society of the country. Integration of culturally diverse nationalities into the society of host country requires a complex approach as well as a higher level of cultural understanding.

The aim of this article is to identify and analyse possible factors obstructing successful integration of several generations of Turkish migrants in Germany, based on the analysis of MIPEX model, as a unique specific index for the evaluation of migration integration policy based on its score.

## Conclusion

Since 1961, the migration of labour immigrants from Turkey has been constantly increasing, resulting in Turkish immigrants becoming the largest ethnic group in Germany and creating the necessity for their successful integration into majority society. Even though there are already 3 generations of Turks living in Germany, problems regarding their cultural integration keep constantly appearing and worsening their position on labour market. Full integration of Turks is not possible due to the existence of several problematic areas, including in particular: higher unemployment rate of immigrants in comparison to locals, xenophobic attitude of majority society and immigrants' lack of education. Comparison of the unemployment (a key indicator of successful economic integration) between the locals and the immigrants (mostly represented by the immigrants of Turkish origin) has clearly shown their insufficient participation in German labour market. Regarding the second-generation, as the main obstacle eliminating the employment chances on German labour market we consider low education level of Turkish immigrants. The youngest generation of Turks struggles with identity dilemma. "When I am in Turkey I feel like German, but in Germany I am perceived by others as a foreigner." Most second-generation and third-generation Turks have created emotional and cultural ties to Turkey, the country of origin of their parents, as well as to Germany, where they currently live, and therefore we can say that they live in two contradictory cultures, strictly separating their public and private lives. German culture dominates during work time or studying time at school, but in private lives Turkish immigrants keep their original cultural customs and traditions, including regular prayers in mosques and respect for the month of fasting - Ramadan.

In the past decade, noticeable migration of Turks back to Turkey has been recorded. In our opinion, the trend of young Turkish immigrants towards the emigration back to Turkey is not as strongly associated with failed integration, as rather with the problem of social inequality in Germany, since in many cases even the excellent education does not guarantee them appropriate and expected working positions on the labour market. Insufficient integration, discrimination, identity dilemma and better economic prospects in Turkey emerge as main push and pull factors for the emigration of young generation Turks from Germany to Turkey. For the verification purposes of the key problems of Turks' integration in Germany we focused our attention on the evaluation of immigrant integration policy in Germany via internationally recognized MIPEX. Within this evaluation of German immigrant integration policy several negative aspects have appeared, which we can consider as possible obstacles in successful immigrants' integration into this country, including:

- the delay of family reunification to a greater extent than in any other European country;
- the existence of education and performance gap between local students and students with the immigration background;
- the lack of support provided to immigrants in access to health services;
- the possibility of obtaining dual citizenship concerning in particular large Turkish community in the country until 2014;
- the lack of immigrants' participation in political life;
- weaker protection of the immigrants against the national discrimination in some areas of life, such as housing and health care.

Despite the fact that Germany ranked 10<sup>th</sup> in MIPEX latest evaluation list in 2014, there is still a room for improvement in its integration policy. Therefore, Germany should put more emphasis on the improvement of integration measures, which ensure the most effective immigrants' integration into majority society as well as on the elimination of possible risks associated with the possibility of economically, socially and culturally divided society or even closed immigration communities. In our opinion, education is the key factor supporting immigrants' integration process and influencing their future professional careers. Therefore, German government should focus more attention on the problems in education system for the young generation of Turks and other legal immigrants in the country. The question arises whether the phenomenon of "migration crisis", associated in particular with the huge increase of irregular migration, will affect the integration immigration policy of the EU and its member countries not in the terms of liberalization, but on the contrary, in the terms of tightening, affecting all the immigrants, including the legal ones, what is actually already happening today.

## Acknowledgements

This paper was created within the project Scientific Grant Agency VEGA Project No. 1/0897/17.

## References

- [1] Algan, Y. et al. 2012. *Cultural Integration of Immigrants in Europe*. UK: Oxford University Press. DOI: 10.1111/ecca.12043
- [2] Baláž, P. et al. 2010. *Medzinárodné podnikanie*. Bratislava: SPRINT.
- [3] Çağlar, E. 2007. *Very Brief Review of First, Second, and Third Generation Turks' Identity Politics in Germany through Following the Content of the Movie*, Berlin in Berlin. *Antropoloji*, 22, pp 143-161.
- [4] Gligorov, V. 2006. Building walls: a note on immigration. *The Vienna Institute Monthly Report*, 8-9: 13-19.
- [5] Chudžíková, A. et al. 2011. *Indikátory integrácie pre 21. storočie. Vieme ako merať úspešnosť integrácie migrantov?* Available at: <http://www.governance.sk/assets/files/publikacie/Indikatory%20integracie%20pre%2021.storocie.pdf>
- [6] Kosír, I., Rosenberg, M. 2007. *Zahraničnoobchodná politika Európskej únie*. Bratislava: EKONÓM. ISBN: 978-80-225-2462-9
- [7] Nees, V. 2016. *German parliament adopts anti-democratic Asylum Package II*. Available at: <https://www.wsws.org/en/articles/2016/03/02/asyl-m02.html>
- [8] Sürig, I., Wilmes, M. 2015. *The Integration of the Second Generation in Germany*. Amsterdam: Amsterdam University Press. Available at: <https://www.imiscoe.org/docman-books/405-suerig-wilmes-ties-in-germany/file>
- [9] Zanker, H. J. 2008. *Why do people migrate? A review of the theoretical literature*. Available at: <https://mpra.ub.uni-muenchen.de/28197/1/2008WP002>
- \*\*\* Euractiv. 2014. *Germany moves to allow dual citizenship*. Available at: <http://www.euractiv.com/section/justice-home-affairs/news/germany-moves-to-allow-dual-citizenship/>
- \*\*\* Euwals et al. 2007. *Immigration, Integration and the Labour Market: Turkish Immigrants in Germany and the Netherlands*. IZA Discussion Paper No. 2677, Bonn: The Institute for the Study of Labor (IZA).
- \*\*\* MIPEX. 2016. *Policy indicators: Key Findings*. Available at: <http://www.mipex.eu/key-findings>
- \*\*\* MIPEX. 2014. *Mipex 2014 – Germany*. Available at: <http://www.mipex.eu/germany>

## Do Stock Markets Complement Banks in Promoting Economic Growth? Evidence from West African Countries

Kizito Uyi EHIGIAMUSOE  
Economics Program, School of Social Sciences  
Universiti Sains Malaysia  
[ehiuyikizexcel@yahoo.com](mailto:ehiuyikizexcel@yahoo.com)

Hooi Hooi LEAN  
Economics Program, School of Social Sciences  
Universiti Sains Malaysia  
[hooilean@usm.my](mailto:hooilean@usm.my)

### Suggested Citation:

Ehigiamusoe, K. U., Lean, H. H. 2017. Do stock markets complement banks in promoting economic growth? Evidence from West African countries. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 482 – 497.

### Abstract:

This paper examines the impact of stock markets on economic growth in Cote D'Ivoire, Ghana, and Nigeria using three proxies to determine whether the impact of stock markets on economic growth is sensitive to the proxy used to measure stock market development. It also seeks to determine whether the impact of stock markets on economic growth is sensitive to the inclusion of banking development indicator in the regression. After accounting for structural breaks and cross-sectional dependency, the study reveals that stock markets have positive impact on economic growth in all the countries, albeit the impact is not very robust in Ghana. The results are neither sensitive to the proxy used to measure stock market development nor the inclusion of banking development indicator in the regression. This implies that stock market is a complement rather than a substitute for banking development in the process of economic development in West African countries. Thus, the countries should strengthen policies that promote all aspects of stock market development in order to accelerate sustainable economic development.

**Keywords:** stock markets; banking development; economic growth; West Africa

**JEL Classification:** G12; O11; G21

### Introduction

The growth and proliferation of stock markets globally in the last three decades underscore the belief that stock markets could be deployed as ingredients for accelerating economic growth and development. For instance, the number of stock markets in Sub-Sahara Africa has been increasing astronomically since 1980. Similar trends were witnessed in many developing economies in Eastern Europe, Asia and Latin America. However, the West African sub-region witnessed a proliferation of stock markets in recent years, but prior to mid-2000s, there were only three functional stock markets in West Africa located in Nigeria, Cote D'Ivoire and Ghana. The period of the development and proliferation of stock markets in West Africa coincided with the period that the sub-region experienced a remarkable economic growth relative to Europe, Asia and Latin America. Can the development of stock market help to explain variations in economic growth in West Africa region?

Thus, a well-developed and functional stock market is seen as a veritable ingredient of economic growth because it reduces the costs of savings mobilization, facilitates productive investments and allocates resources to investments with higher returns. Though many profitable investments require long-term capital, but most savers are unwilling to relinquish their capital for a long time. Hence, a very liquid stock market provides the opportunity for savers to trade their equity and also for investors to have permanent access to capital through equity issue. A liquid stock market is also capable of increasing the incentives for investors to have access to information about firms and their profitability. Finally, internationally integrated stock markets allow international risk sharing, improve allocation of resources and promote economic growth and development.



Nevertheless, the relationship between stock market and economic growth has been a subject of debate among researchers as there are empirical evidence to either support or disprove the link between the two variables. Levine and Zervos (1998), Beck and Levine (2004) found that stock market liquidity has positive and robust relationship with long-run economic growth. Notwithstanding, the relationship between stock markets and economic growth in developing countries is still unclear and this could be the consequence of the low level of development of stock markets and the economies. Though Levine and Zervos (1998) revealed that stock markets liquidity has positive impact on economic growth, capital accumulation and productivity improvements because stock markets provide different services from banks, they also discovered that the size, volatility and international integration of stock markets have no robust link with economic growth.

Also, Ahmad *et al.* (2012) revealed that stock markets play insignificant role in promoting economic growth in developing countries such as Pakistan and Bangladesh. Similarly, Singh (1997) revealed that though stock markets development has been an integral part of the internal and external financial liberalization in most developing countries in the 1980s and 1990s, but this development is unlikely to achieve faster long term economic growth and quicker industrialization. These he adduced to the volatility and arbitrariness of the stock market pricing process, the unfavourable interaction between stock markets and currency markets and the undermining of banking system. Donwa and Odia (2010) also found no evidence of significant causal relations from stock market to economic growth in Nigeria. As noted by Arestis *et al.* (2001), Handa and Khan (2008) and Odhiambo (2010), the impact of stock markets on economic growth could vary from one country or methodology or proxy to another, and it could also be sensitive to the time period (whether in the long-run or short-run).

The above analysis revealed the absence of consensus on the relationship between stock markets and economic growth among researchers. It also showed lack of agreement on which proxy or time period that stock market is more growth-enhancing. Hence, the specific objectives of this study are: (i) to examine the impact of stock market development on economic growth in West Africa countries (ii) to determine whether the impact of stock markets on economic growth is sensitive to the proxy used to measure stock market development. (iii) to investigate whether the inclusion of banking development indicator in the regression affect the impact of stock market development on economic growth in West Africa countries.

Though this is not the first attempt to examine the simultaneous impact of stock market and bank on economic growth (Beck and Levine 2004, Naceur and Ghazouani 2007), but this study differs significantly from previous studies. Hence, it intends to contribute to the existing literature in four-folds: Firstly, unlike other parts of the world where some literature link stock market and banking development to economic growth, the nexus between these variables in the West Africa sub-region has been less thoroughly explored. Also, some previous studies usually transform the annual data to 5-years non-overlapping averages so as to avoid accounting for integration, structural breaks and cross sectional dependence. Baltagi *et al.* (2009) argued that taking 5-years averages of annual data because of cyclical concerns leads to loss of many observations that could affect the statistical significance of the variables. But this present study uses annual data and empirical strategy that accounts for integration, structural breaks and cross-sectional dependence. This is fundamental because Narayan and Smyth (2008) argued that the presence of structural breaks in time series data could distort the long-run equilibrium relationship between two variables and leads to misleading conclusion. Also, Pesaran (2006) asserted that parameters estimates could be substantially bias and their sizes distorted if cross-sectional dependence is overlooked.

Secondly, unlike some previous studies that used one proxy, this study uses three proxies that measure different aspects of stock market such as the size, liquidity and efficiency as well as two proxies for banking development. The use of only one proxy could produce misleading results and leads to wrong conclusion. It is expected that the link between the various aspects of stock market and bank development with economic growth would be unveiled. As observed by Naceur and Ghazouani (2007), the use of all the indicators that measure the size, liquidity and efficiency of the stock market provide more information about stock market development than using only one indicator.

Third, the inclusion of banking development indicator in the regression enables us to investigate whether stock markets provide services different from the services provided by the banking sector. Levine and Zervos (1998)



opined that the services stock markets provide are different from the services provided by the banks, hence, stock market liquidity is positively correlated with economic growth, capital accumulation and productivity improvements. Finally, unlike some previous studies, this study focuses on developing countries. The scope is limited to the three major stock markets in West Africa region because the other West African countries recently established their stock markets and consequently do not have stock markets data. Also, Nigeria, Ghana, Cote D'Ivoire have embarked on stock markets reforms in recent times leading to the development of the stock markets. These three countries are probably the largest economies in West Africa region, and their findings will be useful to other developing countries in Africa, Asia and Latin America that are vigorously pursuing stock market reforms.

Besides this introduction, the remaining parts of the paper is divided into four sections. Section 2 examines the related literature while section 3 presents the methodology employed in the study. Section 4 contains the empirical results and findings. The last section concludes the study with some policy options.

## Conclusion

This paper examine the impact of stock market development on economic growth in West African countries using three proxies that measure different aspects of stock market development. Market capitalization relative to GDP, value of stock traded relative to GDP and turnover ratio measure stock market size, liquidity and respectively efficiency. The analysis provided the opportunity to determine whether the impact of stock market on economic growth is sensitive to the proxy used to measure stock market development. It also sought to determine whether the impact of stock market on economic growth is sensitive to the inclusion of banking development indicator in the regression. Since the study revealed the existence of cross-sectional dependence among the countries in the panel, the study used empirical strategy that account for cross-sectional dependence.

Evidence from the study revealed that stock market development has positive impact on economic growth in Cote D'Ivoire, Ghana and Nigeria, albeit, the impact is not very robust in Ghana. All the proxies of stock market development yielded almost the same results in all the countries suggesting that the impact of stock market on economic growth is not sensitive to the proxy used to measure stock market development. Furthermore, the inclusion of banking development indicator in the regression did not alter the results substantially, implying that stock market is a complement rather than a substitute for banking development in the process of economic development in West African countries. Also the banking development indicators included in the model were found to be positively related to economic growth in Cote D'Ivoire. Thus, West African countries should strengthen policies that promote all aspects of stock market development in order to accelerate sustainable economic development.

## Acknowledgement

Kizito Uyi Ehigiamusoe wishes to appreciate the support from Universiti Sains Malaysia through the USM Fellowship Award 2/15.

## References

- [1] Adjasi, C. K. and Biekpe, N. B. 2006. Stock Market Development and Economic Growth: the case of selected African countries. *African Development Review*, 18(1): 144-161. DOI: 10.1111/j.1467-8268.2006.00136.
- [2] Ahmad, Z., Khan, A. A. and Tariq, A. 2012. Stock Market Development and Economic Growth: A comparative study of Pakistan and Bangladesh. *African Journal of Business Management*, 6(8): 2985-2989.
- [3] Akinlo, E. and Akinlo, O. 2009. Stock Market Development and Economic Growth: Evidence from seven Sub-Saharan African countries. *Journal of Economics and Business*, 61(2): 162-171.
- [4] Alajekwu, U. B and Achugbu, A. A. 2012. The Role of Stock Market Development on Economic Growth in Nigeria: A Time Series Analysis. *African Research Review*, 6(1): 51-70. DOI.org/10.4314/afrev.v6i1.5
- [5] Arestis, P. Demetriades, P. and Luintel, K. 2001. Financial Development and Economic Growth: The Role of Stock Markets. *Journal of Money, Credit and Banking*, 33 (1): 16-41. DOI: 10.2307/2673870
- [6] Atje, R. and Jovanovic, B. 1993. Stock Markets and Development. *European Economic Review*, 37(2): 632-640. DOI.org/10.1016/0014-2921(93)90053-D
- [7] Athanasios, V. and Antonios, A. 2012. Stock Market Development and Economic Growth an Empirical Analysis for Greece. *American Journal of Economics and Business Administration*, 4(2): 135-143.
- [8] Bai, J. and Perron, P. 2003. Computation and Analysis of Multiple Structural Change Models. *Journal of Applied Econometrics*, 18(1): 1-22. DOI: 10.1002/jae.659
- [9] Baltagi, B. H., Demetriades, P. O. and Law, S. H. 2009. Financial Development and Openness: Evidence from Panel Data. *Journal of Development Economics*, 89(2), 285-296. DOI.org/10.1016/j.jdeveco.2008.06.006
- [10] Bayar, Y., Kaya, A. and Yildirim, M. 2014. Effects of Stock Market Development on Economic Growth: Evidence from Turkey. *International Journal of Financial Research*, 5(1): 93-103.

- [11] Beck, T., Levine, R. and Loayza, N. 2000. Finance and the Sources of Growth. *Journal of Financial Economics*, 58(1): 261-300. DOI.org/10.1016/S0304-405X(00)00072-6
- [12] Beck, T. and Levine, R. 2004. Stock Markets, Banks and Growth; Panel Evidence. *Journal of Banking and Finance*. 28(3): 423-442. DOI.org/10.1016/S0378-4266(02)00408-9
- [13] Bittencourt, M. 2011. Inflation and Financial Development: Evidence from Brazil. *Economic Modelling*, 28(1): 91-99. DOI.org/10.1016/j.econmod.2010.09.021
- [14] Blackburn, K., Bose, N. and Capasso, S. 2005. Financial Development, Financing Choice and Economic Growth. *Review of Development Economics*, 9(2): 135-149. DOI: 10.1111/j.1467-9361.2005.00268.
- [15] Breusch, T. S. and Pagan, A. R. 1980. The Lagrange Multiplier test and its applications to Model Specification in Econometrics. *The Review of Economic Studies*, 47(1): 239-253.
- [16] Caporale, G. M., Howells, P. and Soliman, A. M. 2005. Endogenous Growth Model and Stock Market Development: Evidence from four Countries. *Review of Development Economics*, 9(2): 166-176.
- [17] Carp, L. 2012. Can Stock Market Development Boost Economic Growth? Empirical Evidence from Emerging Markets in Central and Eastern Europe. *Procedia Economics and Finance*, 3: 438-444.
- [18] Chortareas, G., Magkonis, G., Moschos, D. and Panagiotidis, T. 2015. Financial Development and Economic Activity in Advanced and Developing Open Economies: Evidence from Panel Cointegration. *Review of Development Economics*, 19(1): 163-177. DOI: 10.1111/rode.12132
- [19] Deb, S. G. and Mukherjee, J. 2008. Does Stock Market Development Cause Economic Growth? A Time Series Analysis for Indian Economy. *International Research Journal of Finance and Economics*, 21: 142-149.
- [20] Demetriades, P. and Law, S. H. 2006. Finance, Institutions and Economic Development. *International Journal of Finance and Economics*, 11(3): 245-260. DOI: 10.1002/ijfe.296
- [21] Donwa, P. and Odia, J. 2010. An Empirical Analysis of the Impact of the Nigerian Capital Market on her Socio-Economic Development. *Journal of Social Sciences*, 24(2): 135-142.
- [22] Dritsaki, C. and Dritsaki-Bargiota, M. 2005. The Causal Relationship between Stock, Credit Market and Economic Development: An Empirical Evidence for Greece. *Economic Change and Restructuring*, 38(1): 113-127. DOI: 10.1007/s10644-005-4525-3
- [23] Handa, J. and Khan, S. R. 2008. Financial Development and Economic Growth: A Symbiotic Relationship. *Applied Financial Economics*, 18(13): 1033-1049. DOI.org/10.1080/09603100701477275
- [24] Harris, R. D. 1997. Stock Markets and Development: A Re-assessment. *European Economic Review*, 41(1): 139-146. DOI.org/10.1016/S0014-2921(96)00021-9
- [25] Henry, P. B. 2000. Do Stock Market Liberalizations Cause Investment Booms? *Journal of Financial Economics*, 58(1): 301-334. DOI.org/10.1016/S0304-405X(00)00073-8
- [26] Im, K. S., Pesaran, M. H. and Shin, Y. 2003. Testing for Unit Roots in Heterogeneous Panels. *Journal of Econometrics*, 115(1): 53-74. DOI.org/10.1016/S0304-4076(03)00092-7
- [27] Kolapo, F. T. and Adaramola, A. O. 2012. The Impact of the Nigerian Capital Market on Economic Growth (1990-2010). *International Journal of Developing Societies*, 1(1): 11-19.
- [28] Levin, A., Lin, C. F. and Chu, C. S. 2002. Unit Root Tests in Panel Data: Asymptotic and Finite-sample Properties. *Journal of Econometrics*, 108(1): 1-24. DOI.org/10.1016/S0304-4076(01)00098-7
- [29] Levine, R., Loayza, N. and Beck, T. 2000. Financial Intermediation and Growth: Causality and Causes. *Journal of Monetary Economics*, 46(1): 31-77. DOI.org/10.1016/S0304-3932(00)00017-9
- [30] Levine, R. and Zervos, S. 1998. Stock Market, Banks and Economic Growth. *The American Economic Review*, 88 (3): 537-558.

- [31] Maddala, G. S. and Wu, S. 1999. A Comparative Study of Unit Root Tests with Panel Data and a new simple test. *Oxford Bulletin of Economics and Statistics*, 61(S1): 631-652. DOI: 10.1111/1468-0084.0610s1631
- [32] Marques, L. M., Fuinhas, J. A. and Marques, A. C. 2013. Does the Stock Market cause Economic Growth? Portuguese Evidence of Economic Regime Change. *Economic Modelling*, 32: 316-324. DOI.org/10.1016/j.econmod.2013.02.015
- [33] Masoud, N. and Hardaker, G. 2012. The Impact of Financial Development on Economic Growth: Empirical Analysis of Emerging Market Countries. *Studies in Economics and Finance*, 29(3): 148-173.
- [34] Menyah, K., Nazlioglu, S. and Wolde-Rufael, Y. 2014. Financial Development, Trade Openness and Economic Growth in African Countries: New insights from a Panel Causality Approach. *Economic Modelling*, 37: 386-394. DOI.org/10.1016/j.econmod.2013.11.044
- [35] Naceur, S. B. and Ghazouani, S. 2007. Stock Markets, Banks, and Economic Growth: Empirical Evidence from the MENA Region. *Research in International Business and Finance*, 21(2): 297-315.
- [36] Narayan, P. K. and Smyth, R. 2008. Energy Consumption and Real GDP in G7 Countries: New Evidence from Panel Cointegration with Structural Breaks. *Energy Economics*, 30(5): 2331-2341.
- [37] Nyasha, S. and Odhiambo, N. M. 2015. Economic Growth and Market-Based Financial Systems: A Review. *Studies in Economics and Finance*, 32(2): 235-255. DOI.org/10.1108/SEF-03-2014-0053
- [38] Odhiambo, N. M. 2010. *Stock Market Development and Economic Growth in South Africa: an ARDL-Bounds Testing Approach*. World Business Institute. 1-13.
- [39] Osuala, A. E., Okereke, J. E. and Nwansi, G. U. 2013. Does Stock Market Development Promote Economic Growth in Emerging Markets? A Causality Evidence from Nigeria. *World Review of Business Research*, 3(4): 1-13.
- [40] Pesaran, M. H. 2004. General Diagnostic Tests for Cross Section Dependence in Panels. CESifo Working paper series No.1229, IZA Discussion Paper No 1240. Available at: <http://repec.iza.org/dp1240.pdf>
- [41] Pesaran, M. H. 2006. Estimation and Inference in Large Heterogeneous Panels with a Multifactor Error Structure. *Econometrica*, 74(4): 967-1012. DOI: 10.1111/j.1468-0262.2006.00692.
- [42] Pesaran, M. H. 2007. A Simple Panel Unit Root Test in the Presence of Cross-section Dependence. *Journal of Applied Econometrics*, 22(2): 265-312. DOI: 10.1002/jae.951
- [43] Pesaran, M. H., Ullah, A., and Yamagata, T. 2008. A Bias-adjusted LM Test of Error Cross-Section independence. *The Econometrics Journal*, 11(1): 105-127. DOI: 10.1111/j.1368-423X.2007.00227.x
- [44] Rousseau, P. L. and Wachtel, P. 2000. Equity Market and Growth: Cross-Country Evidence on timing and Outcomes 1980-1995. *Journal of Banking and Finance*, 24(12): 1933-1957.
- [45] Riman, H. B., Ezzo, I. E. and Eyo, E. 2008. Stock Market Performance and Economic Growth in Nigeria: A Causality Investigation. *Global Journal of Social Sciences*, 7(2): 85-91.
- [46] Shahbaz, M., Ahmed, N. and Ali, L. 2008. Stock Market Development and Economic Growth: ARDL Causality in Pakistan. *International Research Journal of Finance and Economics*, 14(1): 182-195.
- [47] Singh, A. 1997. Financial Liberalisation, Stock Markets and Economic Development. *The Economic Journal*, 107(442): 771-782. DOI: 10.1111/j.1468-0297.1997.tb00042.x
- [48] Wallack, J. S. 2003. Structural breaks in Indian macroeconomic data. *Economic and Political Weekly*, 38(41): 4312-4315.
- [49] Zellner, A. 1962. An Efficient Method of Estimating Seemingly Unrelated Regressions and tests for Aggregation Bias. *Journal of the American Statistical Association*, 57(298): 348-368.

## Indications of Social Economic Evolution: Environment Markers of Mutual Investment Funds

Olga Aleksandrovna ZHDANOVA  
Plekhanov Russian University of Economics<sup>1</sup>, Russia  
[olga.angel@bk.ru](mailto:olga.angel@bk.ru)

Tatiana Pavlovna MAKSIMOVA  
Plekhanov Russian University of Economics, Russia  
[Maksimova.TP@rea.ru](mailto:Maksimova.TP@rea.ru)

Denis Grigorievich PEREPELITSA  
Plekhanov Russian University of Economics, Russia  
[Perepelitsa.DG@rea.ru](mailto:Perepelitsa.DG@rea.ru)

### Suggested Citation:

Zhdanova, O. A., Maksimova, T. P., Perepelitsa, D. G. 2017. Indications of social economic evolution: Environment markers of mutual investment funds. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 498 – 505.

### Abstract

One of the primary social and economic tasks to be solved for the innovational development of the Russian economy is the enhancement of the individual investors' investment activity. The article shows the most important factors that contribute to enhancing the investment activity of individual investors through the market of mutual investment funds on the basis of the revealed advantages of the joint investment institute under consideration. The authors of the work offer ways to enhance the investment activity of individual investors, including by improving functioning of mutual investment funds and their infrastructure. The article offers a system of indicators related to the social and economic development of Russia that was formed on the basis of analyzing the environment indicators of the mutual investment funds market. It is offered to supplement the system developed by the authors with the following elements: number of open-ended mutual investment funds, price of net assets of open-ended mutual investment funds, and inflow (outflow) of the capital in open-ended mutual investment funds.

**Keywords:** mutual investment fund; indicator of social and economic development; system of indicators; Russian market of mutual investment funds; investment activity; individual investor.

**JEL Classification:** E20; E22

### Introduction

In Russia the market of joint investment like any other is represented both by formal and informal institutes (Maksimova 2016). However, its main members are institutional investors: joint stock and mutual investment funds, bank-managed mutual funds and private pension funds. Mutual investment funds are the most active members among the above subjects. That is why the research authors focus their attention on their activity.

Functioning of mutual investment funds is closely related to the investment activity of individual investors. Within this article, individual (small) investors will mean individuals who have inconsiderable capital and are not professionals of the financial market. The second emphasis of the research is made on small investors and their investment activity.

One more, third, emphasis of the work has a uniting nature. The authors consider the system of indicators related to the market of mutual investment funds as an indicator of the social and economic development (as applied to Russia).

The article will answer the following questions:

- can the mutual investment fund be considered as an institute to increase the individual investors' investment activity?

---

<sup>1</sup> 117997, Russia, Moscow, Stremyanny Lane, 36

- what opportunities to enhance the individual investors' investment activity are there on the market of mutual investment funds?
- how does the system of indicators of the mutual investment funds market estimate the social and economic development of Russia?

It is necessary to note that this work is a part of the authors' research on the stated problem related to the interrelation of the mutual investment funds market and social and economic development of Russia. The article "Investment Funds Market of as an Indicator of the Country's Social and Economic Development" has already been published within this research (Vershina, Goryainova, Zhdanova, Maksimova 2016).

## Conclusion

“In spite of the global geo-political instability that affects the environment of the global financial markets” (Zhdanova, Perepelitsa 2015), the interest to mutual investment funds remains, although it becomes weaker and weaker. They act as institutes to enhance the investment activity of individual investors with no considerable capital thanks to professional assets management, lack of the necessity to get additional education, inconsiderable time expenses, diversification of investments, possibility to manage investment risks, optimization of the correlation “profitability – risk – liquidity”, diversity of ways to enter the market, simple and clear scheme of the obtained profit taxation at the basic rate, strict legislative regulation, and informational openness.

The ways to enhance the individual investors' investment activity on the market of mutual investment funds shown in the article will contribute not only to increasing the level of life of investors themselves by earning additional income by them but will also create conditions for the inflow of capital in the country economy through the market of joint investment. It will also have a positive impact on the social and economic development of Russia.

Studying characteristics of the Russian market of mutual investment funds allows to form the system of indicators related to social and economic development of the country (as applied to Russia) that includes the number of open-ended mutual investment funds, price of net assets of open-ended mutual investment funds, inflow (outflow) of the capital in open-ended mutual investment funds.

All the above indicators say, firstly, about high market volatility. Secondly, they show negative market tendencies that under other equal conditions display the low interest of individual investors in the market of joint investing and market of mutual investment funds, in particular. In its turn it shows unfavorable social and economic situation in Russia.

## References

- [1] Abramov, A. E. 2005. *Investitsionnyie fondy. Dohodnost i riski, strategii upravleniya portfelem, ob'ekty investirovaniya v Rossii* [Investment Funds. Profitability and Risks, Strategies of Portfolio Management, Objects of Investing in Russia]. Moscow: Alpina Business Books, pp: 416.
- [2] Aipov, A. N. 2010. Upravlenie dohodnostyu paevyih investitsionnyih fondov v usloviyah inansovogo krizisa [Managing Profitability of Mutual investment fund in the Context of Financial Crisis]. *Finances and Credit*, 14: 57-60.
- [3] Aipov, A. N. 2011. Sovershenstvovanie sistemy upravleniya paevyimi investitsionnymi fondami v Rossii [Improving System of Managing Mutual investment fund in Russia]. *Financial Analytics: Problems and Solutions*, 23: 15-22.
- [4] Body, Z. and Merton, R. 2007. *Finansy* [Finance]. Moscow: Williams, pp: 592.
- [5] Body, Z., Kane A., Markus, A. 2008. *Printsiipy investitsiy* [Principles of Investments]. Moscow: Williams, pp: 984.
- [6] Hmyiz, O. V. 2004. *Investitsionnye kompanii na finansovom rynke: osnovnyie napravleniya i rezultaty deyatelnosti* [Investment Companies on the Financial Market: Basic Areas and Results of Activity]. Moscow: VSNU, pp: 320.
- [7] Lukyachenko, D. V. 2011. *Paevyie investitsionnyie fondyi v grazhdanskih pravootnosheniyah* [Mutual investment fund in Civil Legal relations]. Moscow: Your Polygraphic Partner, pp: 138.
- [8] Makarov, A. V. 2005. *Investiruem v paevyie investitsionnye fondy* [Investing in Mutual investment fund]: Moscow: Eksmo, pp: 96.
- [9] Maksimova, T. P. 2016. Mehanizm vliyaniya neformalnyih institutov na traektoriyu transformatsii agrarnoy sferyi ekonomiki RF: metodologicheskie [Mechanism of Influencing Non-formal Institutes on Trajectory of Transformation of the Agrarian Area of Russian Economy: Methodological Aspects]. *Success of Modern Science and Education*, 2: 24-29.

- [10] Pankratova, L. D. 2008. *Paevyie investitsionnyie fondyi RF* [Mutual investment fund of the Russian Federation]. Voronezh: Publishing House of the Voronezh State University, pp: 194.
- [11] Penyugalova, A. I. 2011. *Razrabotka effektivnogo finansovogo mehanizma upravleniya kollektivnyimi investitsiyami v Rossii* [Development of Efficient Financial mechanism of Managing Joint Investments in Russia]. Krasnodar: Publishing House of CNTI, pp: 216.
- [12] Sharp, U. F., Aleksander G. D., and Baley, D. V. 2014. *Investitsii* [Investments]. Moscow: Infra-M, pp: 1028.
- [13] Vershinina, A. A., Goryainova, L. V., Zhdanova O. A., and Maksimova, T. P. 2016. State of the Investment Fund Market of as an Indicator of the Country's Socio-Economic Development. *Journal of Internet Banking and Commerce*, 21 (S3): 17.
- [14] Zhdanova, O. A., and Perepelitsa, D. G. 2015. Fondovyye birzhi aziatskogo regiona: perspektivy i problemy [Funds Stock Exchanges of the Asian region: Perspectives and Problems]. *Theory and Practice of Social Development*, 22: 63-65.
- [15] Zhdanova, O. A. 2011. Preimuschestva i nedostatki paevyih investitsionnyih fondov [Advantages and Disadvantages of Mutual investment fund]. *Problems of Economy*, 1: 65-67.
- \*\*\* Informational Portal of the National managers' League. Available at: [www.nlu.ru/stat-count\\_pifs.htm](http://www.nlu.ru/stat-count_pifs.htm)
- \*\*\* Federal Act of the Russian Federation No. 156-FZ dated 29.11.2001 On Investment Funds. *Investfunds*. (n. d.). Available at: <http://pif.investfunds.ru/> (accessed 10.12.2016)
- \*\*\* National Managers' League. Available at: [http://www.nlu.ru/stat-count\\_pifs.htm](http://www.nlu.ru/stat-count_pifs.htm) (accessed 07.11.2016)
- \*\*\* Official Website of the Central Bank of the Russian Federation, 2016.
- \*\*\* Order of the Federal Financial Markets Service No. 10-79/pz-n dated 28.12.10 "On Approving Provision about the Composition and Structure of Assets of Joint Stock Investment Funds and Assets of Unit Investment Funds".
- \*\*\* Taxation Code of the Russian Federation (part one) No. 146-FZ dated 31.07.98.
- \*\*\* Taxation Code of the Russian Federation (part two) No. 117-FZ dated 05.08.2000.



## Dynamic Bilateral Integration of Stock Markets and Its Driving Factors

NAJMUDIN

Doctoral Program, Faculty of Economics and Business  
Diponegoro University, Indonesia  
Faculty of Economics and Business, Jenderal Soedirman University, Indonesia  
[kuliah\\_najmudin@yahoo.co.id](mailto:kuliah_najmudin@yahoo.co.id)

Intan SHAFERI

Faculty of Economics and Business, Jenderal Soedirman University, Indonesia  
Doctoral Program at Diponegoro University, Indonesia  
[ishaferi@yahoo.com](mailto:ishaferi@yahoo.com)

Sugeng WAHYUDI

Faculty of Economics and Business, Diponegoro University, Indonesia  
[sug\\_w@yahoo.com](mailto:sug_w@yahoo.com)

Harjum MUHARAM

Faculty of Economics and Business, Diponegoro University, Indonesia  
[hardjum@gmail.com](mailto:hardjum@gmail.com)

### Suggested Citation:

Najmudin, Shaferi, I., Wahyudi, S., Muharam, H. 2017. Dynamic bilateral integration of stock markets and its driving factors. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 506 – 522.

### Abstract:

This study aims to assess the degree of dynamic integration in developed and emerging stock markets and to investigate various factors fostering the integration of those markets. Dynamic conditional correlation (DCC) technique was used to identify the degree of dynamic correlation between two stock markets returns and henceforth it was applied as a measure for assessing the degree of integration. We employed panel data regression and GARCH (1,1) techniques to investigate its determinants using data observed during the period January 2000 to May 2016 on a monthly basis from four countries selected. Result obtained from the assessment indicated that different pairs of international stock markets displayed differing degree of integration. The investigation on the effects of its determinants suggested that interest rate and exchange rate volatility had negative effect on the degree of market integration. Furthermore, inflation rate had no effect, while crisis condition and return volatility increased the degree of market integration. Specifically, significant role of those factors in explaining dynamic integration was only found in emerging stock markets.

**Keywords:** dynamic integration; DCC; GARCH; panel data.

**JEL Classification:** F36; G15; C10

### Introduction

The removal of various explicit barriers gradually to international trade and investment exhibits to have lasted since last three decades. Financial liberalization generally refers to the removal of direct or institutional barriers that include legal restrictions on cross-border securities trade, foreign exchange regulation, repatriation limits, taxes, and transactions costs. Liberalization and open financial markets should allow global investors to enter the market, buy domestic stocks and apply international portfolio diversification. This will eventually lead to the demands and the urgent need for firms' management to increase transparency and accountability that will generate a growing resources allocation, reduce the risk of holding stocks and reduce cost of capital, which in turn leads to increased real assets investment and higher economic welfare (Arouri, Nguyen, and Pukthuanthong 2012, Diamandis 2008, Kim and Singal 2000).

Financial liberalization implemented by developed countries have a series of major objectives such as the strengthening of financial integration in order to obtain a number of benefits including risk diversification, volatility

stabilization, cost of capital reduction, informational efficiency improvement, and capital inflows movement in providing funding for many domestic investment projects in developing stock markets. The benefits may ultimately increase economic growth (Bekaert and Harvey 1997, 2003). Therefore, integration of stock markets is a central concept in the field of international finance and investment.

Consequences of financial liberalization and integrated financial markets, on the one hand, have a positive impact as stated above. However, large-scale capital inflows contain certain risks in the recipient country, especially when their financial systems are not sufficiently advanced, and domestic macroeconomic and financial policies are weak or inconsistent (Alper and Yilmaz 2004). Furthermore, Bekaert and Harvey (1995) and Phylaktis and Ravazzolo (2002) argue that financial liberalization makes financial markets to be more integrated to the global international financial movements so that is more sensitive to external shocks. Economic events show that the financial turmoil does not occur alone on a country or a region. In addition, volatility spill over is a consequence of financial interdependence between stock markets. Many stock markets have received systemic impact and volatility spill over caused by the delivery of information spill over from other markets (Fleming, Kirby, and Ostdiek 1998).

The integration among the world's stock markets is of importance for both international investors and policy-makers. For international investors, the integration determines the opportunities for international portfolio diversification. They need to understand the forces behind the interdependence of stock markets in order to realize the potential risks and rewards of global diversification. For policy-makers, it can result in contagion effects due to which the price changes and potential errors are transmitted across markets. Contagion effects have been magnified by the major events affecting stock markets such as the global financial crisis. They need to understand the driving forces behind the integration since contagion means irrational capital flows, especially capital outflows when capital is needed the most (Lean and Smyth 2014, Pretorius 2002).

From the perspective of analytic techniques, they are increasingly sophisticated in examining topic of markets integration so as to enrich the expansion of analysis and reduce the weaknesses of previous techniques. Considering that risk premium on equities and financial integration processes appear to vary over time caused by the degree of economic integration varies over time for a given pair of countries (Bekaert and Harvey 1995, Guesmi and Teulon 2014, Harvey 1991, Kearney and Lucey 2004) and dynamic development of economic and business factors, the previous studies among others Karolyi and Stulz (1996), Karim and Ning (2013), Dorodnykh (2014) require expansion of analysis.

Zonouzi, Mansourfar, and Azar (2014) reveal that in most previous studies, Pearson correlation test was used to analyze the short-term relationship between market prices. Recent empirical studies, however, show that the correlation between equity returns varies over time. Therefore, they use DCC model to review the conditional correlation varying over time. Other studies using the DCC technique were conducted by Kuper and Lestano (2007), Chiang, Jeon, and Li (2007), Diamandis (2008), Arouri and Nguyen (2010), Christoffersen, Errunza, Jacobs, and Jin (2014), Majdoub and Mansour (2014).

Our study differs from the previous studies on factors influencing degree of market integration in term of the analytic technique. Our study accommodates integration process varying over time by applying dynamic conditional correlation (DCC) as a measure of integration and it becomes dependent variable in our model. DCC technique was proposed by Engle (2002) and has been adopted in several studies to examine the degree of integration between stock markets. In addition, from the scope of discussion, literature on how stock markets are integrated has been widely studied in various countries. However, it still can be counted as the study investigating on forces affecting the degree of stock market integration (Karim and Ning 2013, Mobarek and Mollah 2016, Pretorius 2002). Because it was still scarce and less complete and to take advantage of increasingly sophisticated analytic technique, our research attempts to fill the gap.

According to three categories of literature on stock markets interdependence stated by Pretorius (2002), we examine the first and the third categories. We investigate stock markets interdependence to determine how specific pairs of stock markets are integrated and attempt to explain why the stock markets are integrated. Section 2 provides a literature review on stock market integration covering theory and definition; several previous studies that examine the presence of integration and its determinants in various countries. The data and methods are explained in Section 3. The results and discussion are given in Section 4, and Section 5 presents the conclusions generated from this study.

## Conclusion

Based on the analysis and discussion in previous section, one can be concluded that the degrees of integration among the stock markets are relatively low as a whole. The pair of stock markets between two developed countries has a higher degree of integration than the pair of emerging stock markets. While the pair of stock markets having different class (between developed and emerging stock market) shows that its degree of integration lies in between pairs of stock markets having the same class. By adding the assets of emerging markets into assets portfolio of developed markets potentially increases benefits of international portfolio diversification that depends on degree of correlation between stock market returns. Therefore, it is necessary to analyze combination among stock markets of developed and emerging countries.

Based on the analysis of factors driving the dynamic integrations among stock markets, the results empirically demonstrate that interest rate and exchange rate volatility have a negative effect on the degree of stock market integration. This means that the lower the interest rate difference between a country with other country, and the lower the volatility of exchange rates, the higher the degree of the stock market integration. The global financial crisis and stock markets volatility have a positive effect on the degree of stock market integration. This means that the degree of integration among stock markets appears to be higher during the crisis period and high volatility. Meanwhile, the inflation rate has no effect on the degree of integration.

This research can be one of the important considerations for stock market participants, especially international investors to understand the magnitude of the degree of integration and factors driving the degree of integration, which are interest rate, exchange rate volatility, market and macroeconomic conditions, and market volatility. Thus, they can make decisions on selected stock markets that should be included in the portfolio diversification. In addition, they can determine their position accurately and quickly in the trade, reduce uncertainty, and maximize their capital gains.

In the analysis of this research, the model used is relatively simple, only OLS, pooled data, and GARCH(1,1) techniques. For subsequent studies, it needs to be extended with lagged conditional variance of error term and squared error term in several periods by employing an iterative process and a variety of other GARCH models to obtain the best model. In addition, there are many other potential determinants that have not been explored by considering the type of data that have pursued higher frequencies.

## References

- [1] Alper, C. E., and Yilmaz, K. 2004. Volatility and contagion: evidence from the Istanbul Stock Exchange. *Economic Systems*, 28(4): 353-367. DOI: 10.1016/j.ecosys.2004.08.003
- [2] Arouri, M. E. H., and Nguyen, D. K. 2010. Time-varying characteristics of cross-market linkages with empirical application to Gulf stock markets. *Managerial Finance*, 36(1): 57-70. DOI: 10.1108/03074351011006847
- [3] Arouri, M. E. H., Nguyen, D. K., and Pukthuanthong, K. 2012. An international CAPM for partially integrated markets: Theory and empirical evidence. *Journal of Banking & Finance*, 36: 2473-2493. DOI: 10.1016/j.jbankfin.2012.05.004
- [4] Arshanapalli, B., and Doukas, J. 1993. International stock market linkages: Evidence from the pre- and post-October 1987 period. *Journal of Banking and Finance*, 17: 193-208. DOI: 10.1016/0378-4266(93)90088-U
- [5] Baltagi, B. H. 2005. *Econometric Analysis of Panel Data* (3<sup>rd</sup> ed.). The Atrium, Southern Gate, Chichester, West Sussex, England: John Wiley & Sons Ltd. ISBN-10 0-470-01456-3
- [6] Bekaert, G., and Harvey, C. R. 1995. Time-varying world market integration. *The Journal of Finance*, L(2). DOI: 10.1111/j.1540-6261.1995.tb04790.x
- [7] Bekaert, G., and Harvey, C. R. 1997. Emerging equity market volatility. *Journal of Financial Economics*, 43: 29-77. DOI: 10.1016/S0304-405X(96)00889-6

- [8] Bekaert, G., and Harvey, C. R. 2003. Emerging markets finance. *Journal of Empirical Finance*, 10: 3-55. DOI: 10.1016/S0927-5398(02)00054-3
- [9] Bollerslev, T. 1986. Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics*, 31: 307-327. DOI: 10.1016/0304-4076(86)90063-1
- [10] Bracker, K., Docking, D. S., and Koch, P. D. 1999. Economic determinants of evolution in international stock market integration. *Journal of Empirical Finance*, 6: 1-27. DOI: 10.1016/S0927-5398(98)00007-3
- [11] Chen, N.-F., Roll, R., and Ross, S. A. 1986. Economic forces and the stock market. *Journal of Economic Literature*, 41(2): 478-539. DOI: 10.1086/296344
- [12] Chiang, T. C., Jeon, B. N., Li, H. 2007. Dynamic correlation analysis of financial contagion: Evidence from Asian markets. *Journal of International Money and Finance*, 26(7): 1206 - 1228. DOI: 10.1016/j.jimonfin.2007.06.005
- [13] Choudhry, T. 1994. Stochastic trends and stock prices: an international inquiry. *Applied Financial Economics*, 4(6): 383-390. DOI: 10.1080/758518670
- [14] Christoffersen, P., Errunza, V., Jacobs, K., Jin, X. 2014. Correlation dynamics and international diversification benefits. *International Journal of Forecasting*, 30(3): 807-824. DOI: 10.1016/j.ijforecast.2014.01.001
- [15] Diamandis, P. F. 2008. Financial liberalization and changes in the dynamic behaviour of emerging market volatility: Evidence from four Latin American equity markets. *Research in International Business and Finance*, 22(3): 362-377. DOI: 10.1016/j.ribaf.2008.02.004
- [16] Dorodnykh, E. 2014. Determinants of stock exchange integration: evidence in worldwide perspective. *Journal of Economic Studies*, 41(2): 292-316. DOI: 10.1108/JES-08-2012-0111
- [17] Engle, R. F. 1982. Autoregressive Conditional Heteroscedasticity with estimates of the variance of United Kingdom Inflation. *Econometrica*, 50(4): 987-1008. DOI: 10.2307/1912773
- [18] Engle, R. F. 2002. Dynamic conditional correlation: a new simple class of multivariate GARCH models. *Journal of Business & Economic Statistics*, 20(3): 339-350. DOI: 10.1198/073500102288618487
- [19] Fleming, J., Kirby, C., and Ostdiek, B. 1998. Information and volatility linkages in the stock, bond, and money markets. *Journal of Financial Economics*, 49: 111-137. DOI: 10.1016/S0304-405X(98)00019-1
- [20] Forbes, K. J., and Rigobon, R. 2002. No contagion, only interdependence: measuring stock market comovement. *The Journal of Finance*, LVII(5). DOI: 10.1111/0022-1082.00494
- [21] Francis, I., Kim, S., and Yoon, J. H. 2002. International Stock Market Linkages: Evidence from the Asian Financial Crisis. *Journal of Emerging Market Finance*, 1: 1-29. DOI: 10.1177/097265270200100102
- [22] Goh, K.-L., Yoke-Chenwong, and Kok, K.-L. 2005. Financial Crisis and Intertemporal Linkages Across the ASEAN-5 Stock Markets. *Review of Quantitative Finance and Accounting*, 24: 359-377. DOI: 10.1007/s11156-005-7018-6
- [23] Grubel, H. G. 1968. Internationally Diversified Portfolios: Welfare Gains and Capital Flows. *The American Economic Review*, 58(5): 1299-1314. Available at: <http://www.jstor.org/stable/1814029>
- [24] Guesmi, K., and Teulon, F. 2014. The determinants of regional stock market integration in middle east: A conditional ICAPM approach. *International Economics*, 137: 22-31. DOI: 10.1016/j.inteco.2013.10.006
- [25] Guidi, F., and Ugur, M. 2014. An analysis of South-Eastern European stock markets: Evidence on cointegration and portfolio diversification benefits. *Journal of International Financial Markets, Institutions and Money*, 30: 119-136. DOI: 10.1016/j.intfin.2014.01.007

- [26] Harvey, C. R. 1991. The World Price of Covariance Risk. *The Journal of Finance*, 46(1): 111-157. DOI: 10.2307/2328691
- [27] Johnson, R., and Soenen, L. 2002. Asian economic integration and stock market comovement. *The Journal of Financial Research*, XXV(1): 141-157. DOI: 10.1111/1475-6803.00009
- [28] Kanas, A. 1998. Linkages between the US and European equity markets: further evidence from cointegration tests. *Applied Financial Economics*, 8(6): 607-614. DOI: 10.1080/096031098332646
- [29] Karim, B. A., and Ning, H. X. 2013. Driving forces of the ASEAN-5 stock markets integration. *Asia-Pacific Journal of Business Administration*, 5(3): 186-191. DOI: 10.1108/APJBA-07-2012-0053
- [30] Karolyi, G. A., and Stulz, R. M. 1996. Why Do Markets Move Together? An Investigation of US.-Japan Stock Return Co-movements. *The Journal of Finance*, 51: 951-986. DOI: 10.1111/j.1540-6261.1996.tb02713.x
- [31] Kasa, K. 1992. Common stochastic trends in international stock markets. *Journal of Monetary Economics*, 29: 95-124. DOI: 10.1016/0304-3932(92)90025-W
- [32] Kearney, C., and Lucey, B. M. 2004. International equity market integration: Theory, evidence and implications. *International Review of Financial Analysis*, 13: 571-583. DOI: 10.1016/j.irfa.2004.02.013
- [33] Kim, E. H., and Singal, V. 2000. Stock Market Openings: Experience of Emerging Economies. *Journal of Business*, 73(1). DOI: 10.1086/209631
- [34] Kuper, G. H., and Lestano, L. 2007. Dynamic conditional correlation analysis of financial market interdependence: An application to Thailand and Indonesia. *Journal of Asian Economics*, 18(4): 670-684. DOI: 10.1016/j.asieco.2007.03.007
- [35] Lean, H. H., and Smyth, R. 2014. Stock Market Co-movement in ASEAN and China. *Emerging Markets and The Global Economy*, 603-622. DOI: 10.1016/b978-0-12-411549-1.00025-9
- [36] Lessard, D. R. 1976. World, Country, and Industry Relationships in Equity Returns: Implications for Risk Reduction through International Diversification. *Financial Analysts Journal*, 32(1): 32-38. DOI: [10.2469/faj.v32.n1.32](https://doi.org/10.2469/faj.v32.n1.32)
- [37] Levy, H., and Sarnat, M. 1970. International Diversification of Investment Portfolios. *The American Economic Review*, 60(4): 668-675. Available at: <http://www.jstor.org/stable/1818410>
- [38] Lin, C. M., and Cheng, W. H. 2008. Economic determinants of comovement across international stock markets: the example of Taiwan and its key trading partners. *Applied Economics*, 40(9): 1187-1205. DOI: 10.1080/00036840600771262
- [39] Longin, F., and Solnik, B. 1995. Is the correlation in international equity returns constant: 1960-1990? *Journal of International Money and Finance*, 14(1): 3-26. DOI: 10.1016/0261-5606(94)00001-H
- [40] Majdoub, J., and Mansour, W. 2014. Islamic equity market integration and volatility spillover between emerging and US stock markets. *The North American Journal of Economics and Finance*, 29: 452-470. DOI: 10.1016/j.najef.2014.06.011
- [41] Majid, M. S. A., and Kassim, S. H. 2009. Impact of the 2007 US financial crisis on the emerging equity markets. *International Journal of Emerging Markets*, 4(4): 341-357. DOI: 10.1108/17468800910991241
- [42] Majid, M. S. A., Meera, A. K. M., and Omar, M. A. 2008. Interdependence of Asean-5 Stock Markets from the US and Japan. *Global Economic Review*, 37(2): 201-225. DOI: 10.1080/12265080802021201
- [43] Marashdeh, H. A., and Shrestha, M. B. 2010. Stock Market Integration in the GCC Countries. *International Research Journal of Finance and Economics*, (37): 102-114.

- [44] Mobarek, A., and Li, M. 2014. Regional volatility: common or country-specific? Exploration of international stock market. *Studies in Economics and Finance*, 31(4): 406-425. DOI: 10.1108/SEF-04-2013-0051
- [45] Mobarek, A., and Mollah, S. 2016. *Global Stock Market Integration: Co-Movement, Crises, and Efficiency in Developed and Emerging Markets*. New York City: Palgrave Macmillan. DOI: 10.1057/9781137367549
- [46] Naranjo, A., and Porter, B. 2007. Including emerging markets in international momentum investment strategies. *Emerging Markets Review*, 8(2): 147-166. DOI: 10.1016/j.ememar.2007.01.001
- [47] Phylaktis, K., and Ravazzolo, F. 2002. Measuring financial and economic integration with equity prices in emerging markets. *Journal of International Money and Finance*, 21: 879-903. DOI: 10.1016/S0261-5606(02)00027-X
- [48] Pretorius, E. 2002. Economic determinants of emerging stock market interdependence. *Emerging Markets Review*, 3: 84-105. DOI: 10.1016/S1566-0141(01)00032-2
- [49] Solnik, B. H. 1974. Why Not Diversify Internationally Rather than Domestically? *Financial Analysts Journal*, 30(4): 48-52. DOI: 10.2469/faj.v51.n1.1864
- [50] Tavares, J. 2009. Economic integration and the comovement of stock returns. *Economics Letters*, 103(2): 65-67. DOI: 10.1016/j.econlet.2009.01.016
- [51] Yang, J., Kolari, J. W., and Min, I. 2003. Stock market integration and financial crises: the case of Asia. *Applied Financial Economics*, 13: 477- 486. DOI: 10.1080/09603100210161965
- [52] Yeyati, E. L., Schmukler, S. L., and Horen, N. V. 2009. International financial integration through the law of one price: The role of liquidity and capital controls. *Journal of Financial Intermediation*, 18: 432-463. DOI: 10.1016/j.jfi.2008.09.004
- [53] Zonouzi, S. J. M., Mansourfar, G., and Azar, F. B. 2014. Benefits of international portfolio diversification: Implication of the Middle Eastern oil-producing countries. *International Journal of Islamic and Middle Eastern Finance and Management Science*, 7(4): 457- 472. DOI: 10.1108/IMEFM-02-2014-0017

## Monetary Policy and Economic Growth in Kenya: The Role of Money Supply and Interest Rates

Enock Nyorekwa TWINOBURYO<sup>2</sup>

Department of Economics, University of South Africa<sup>3</sup>

[etwinon@gmail.com](mailto:etwinon@gmail.com)

Nicholas M. ODHIAMBO

Department of Economics, University of South Africa

[odhianm@unisa.ac.za](mailto:odhianm@unisa.ac.za) [nmbaya99@yahoo.com](mailto:nmbaya99@yahoo.com)

### Suggested Citation:

Twinoburyo, E. N., Odhiambo, N. M. 2017. Monetary policy and economic growth in Kenya: The role of money supply and interest rates. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 523 – 537.

### Abstract:

Using the autoregressive distributed lag (ARDL) bounds testing approach; this paper examines the short-run and long-run impact of monetary policy on economic growth in Kenya for the period 1973 to 2013. The paper uses both the broad money supply and the 3-month Treasury bill rate as proxies of monetary policy. Both short-run and long-run empirical results support monetary policy neutrality, implying that monetary policy has no effect on economic growth – both in the short run and in the long run. This could be due to the fact that the increasing fiscal deficits funded domestically in Kenya could have weakened the transmission of monetary policy actions into the real economy. The study recommends that policies aimed at improving the institutional and regulatory environment for the financial sector and monetary policy conduct should be pursued in Kenya. There is also a need for improvement in policy coordination, particularly monetary and fiscal policies.

**Keywords:** Kenya; money supply; interest rates and economic growth

**JEL Classification:** E43; E51; E52.

### Introduction

Although theoretical and academic work on the nexus between monetary policy and growth has evolved from as early as the early 20<sup>th</sup> Century, the evolution has left much debate embedded controversies. Near consensus on long-run monetary policy's neutrality on output can be predominantly traced across the evolution of monetary policy and output theories (Palley 2007). The controversy in theoretical underpinning remains with the choice of monetary policy instrument. Monetarist theory emphasizes the role of money while the Keynesian, post-monetarist, New Classical, New Keynesian and New Consensus models –all emphasize the role of interest rates (Arestis 2009). The New Consensus model, for example, is premised on short-term interest rates, as the sole monetary- policy instrument for short-run output stabilisation (Arestis 2009).

The global crisis, coupled with the dominance of output gaps in most economies over the last decade, particularly developed economies, has heightened the debate on the role of monetary policy in addressing demand deficiencies and economic growth, thereby suggesting a growing consensus that monetary policy matters for economic growth (Woodford 2007, White 2013). Globally, the nexus between monetary policy and economic growth has generated augmented debate for many years among economic scholars – but with little consensus. Two main research strands dominate the empirical works on this nexus: the long-run impact of monetary policy on economic growth, and the role of money supply on economic growth (Asongu 2014). The few empirical studies on the role of interest rates in economic growth have largely been focused on developing countries (Mishra, Montiel and Spilimbergo 2012, Davoodi, Dixit and Pinter 2013).

---

<sup>2</sup>Corresponding Author

<sup>3</sup> P.O Box 392, UNISA0003, Pretoria, South Africa



Monetary policy in practice has also been varied; and so are the respective empirical findings, revealing mixed results on the impact of monetary policy on economic growth (Asongu 2014). The empirical findings differ, depending on the monetary instruments, size and financial-sector deepening, competition with the financial sector, the monetary and exchange rate regimes, as well as the openness of the respective economies. The choice of methodology used also matters (Walsh 2003, Berg *et al.* 2013). Most studies on this subject have relied on Vector-Auto Regressive (VAR) methodology, where the results depend on the restrictions imposed.

However, this may have limitations, particularly for developing economies (Ivrendi and Guloglu 2010, Grace Li *et al.* 2013).

This paper makes three main contributions: Firstly, it investigates the relative impact of the money-supply based and the interest-based monetary policy on economic growth in the long run. Secondly, it examines the short-run impact of monetary policy (broad money supply and short-term interest rate) on economic growth in Kenya, which has been largely neglected in the previous empirical work. The paper also employs the Auto-Regressive Distributive Lag (ARDL) estimation, which has pronounced advantages for small samples, like the one employed in this study. To the best of our knowledge, this could be the first time ARDL has been used to examine the impact of monetary policy on economic growth in Kenya.

The remainder of the paper is structured as follows: Section two presents an overview of Kenya's economic and financial structure. The literature review is presented in section three. The estimation methodology and the empirical results are presented in section four and five, respectively. The conclusions are presented in section six.



## Conclusion

There is a growing consensus that monetary policy matters for economic growth, at least in the short run. However, the relative importance of price-based (short-term interest rates) and quantity-based (money supply) monetary policy remains ambiguous, and particularly dependent on country characteristics. Kenya recently adopted the use of the short-term interest rates, as the operational target in a monetary-targeting regime. The short-run and long-run effects of both money supply and interest-rate monetary policies on economic growth are examined within the neoclassical framework.

The empirical model included two monetary-policy variables – the broad money supply (M2) and the 3-month Treasury bill rate, as well as four other variables (gross capital fixed formation, inflation, exchange rate and trade openness). Using the Auto-Regressive Distributive-Lag (ARDL) bounds-testing approach, this study has examined the short-run and the long-run impact of monetary policy on economic growth in Kenya during the period from 1973 to 2013. Both short-run and long-run empirical results suggest monetary-policy neutrality in Kenya, implying that monetary policy has no effect on economic growth, either in the short run, or in the long run. This could be explained by a myriad of issues – particularly the monetary regime, fiscal-policy dominance and the nature of the financial structure, characterised by a low level of development, the banking sector's dominance of the financial sector, and the oligopolistic nature of the banking industry. Fiscal policy in Kenya is characterised by large and rising fiscal deficits. In some instances, this has been found not to be co-ordinated with the monetary policy. Overall, the study recommends that policies aimed at improving the institutional and regulatory environment for the financial sector and monetary-policy conduct are warranted. There is also a need for improved policy co-ordination, particularly in monetary and fiscal policies.

## References

- [1] Adam, C. S., Maturu, B. O., Ndung'u, N. S., and O'Connell, S. A. 2010. *Building a Monetary Regime for the 21<sup>st</sup> Century*. In C. Adam, P. Collier, and N. Ndung'u Eds., Kenya: Policies for Prosperity. 140-171 pp. Oxford: Oxford University Press. Available at: <http://works.swarthmore.edu/fac-economics/257>
- [2] Amarasekara, C. 2009. The impact of monetary policy on economic growth and inflation in Sri Lanka. *Central Bank of Sri Lanka Staff Studies*, 38: 1 - 44. Available at: <http://doi.org/10.4038/ss.v38i1.1220>
- [3] Andrieu, M. A., Berg, A., Berkes, E., Morales, R., Portillo, R., Vavra, D., and Vleck, J. 2013. Forecasting and Policy Analysis Systems in Low Income Countries: The role of money targeting in Kenya. *International Monetary Fund Working Paper*, 239. Available at: <https://www.imf.org/external/pubs/ft/wp/2013/wp13239.pdf>
- [4] Anyanwu, J. C. 2014. Factors Affecting Economic Growth in Africa: Are there any lessons from China? *African Development Review*, 26(3): 468-493. Available at: <http://0-dx.doi.org/10.1111/1467-8268.12105>
- [5] Arestis, P. 2009. *New Consensus in Macroeconomics: A critical appraisal*. University of Cambridge. Available at: [http://www.levyinstitute.org/pubs/wp\\_564.pdf](http://www.levyinstitute.org/pubs/wp_564.pdf)
- [6] Asongu, S. A. 2014. A note on the long-run neutrality of monetary policy: New empirics. *European Economics Letters*, 3 (1): 1 - 6. Available at: [www.eeet.org.uk/ShowPage.aspx?ID=7](http://www.eeet.org.uk/ShowPage.aspx?ID=7)
- [7] Bannerjee, A., Dolado, J. and Mestre, R. 1998. Error correction Mechanism Tests for cointegration in single equation framework. *Journal of Time Series Analysis*, 19(3): 267-283. Available at: <http://onlinelibrary.wiley.com/doi/10.1111/1467-9892.00091/pdf>
- [8] Barakchian, S. M., and Crowe, C. 2013. Monetary policy matters: Evidence from new shocks data. *Journal of Monetary Economics*, 60: 950-966. Available at: <http://dx.doi.org/10.1016/j.jmoneco.2013.09.006>
- [9] Berg, A., Charry, L., Portillo, R. and Vleck, J. 2013. The monetary transmission mechanism in the Tropics: A Narrative Approach. *International Monetary Fund Working Paper*, 197. Washington, D.C. Available at: <https://www.imf.org/external/pubs/ft/wp/2013/wp13197.pdf>

- [10] Bernanke, B. S., and Mihov, I. 1998. Measuring monetary policy. *The Quarterly Journal of Economics*, 113 (3): 869-902. Available at: <http://www.jstor.org/stable/2586876>
- [11] Buigut, S. 2009. Monetary policy transmission mechanism: Implications for the proposed East African Community (EAC) Monetary Union. Available at: <http://www.csae.ox.ac.uk/conferences/2009-EdiA/paperlist.html>
- [12] Bullard, J. 1999. Testing long-run neutrality propositions: Lessons from the recent research. *Federal Reserve Bank of St. Louis Review*, 81 (6): 57-78. Available at: <https://files.stlouisfed.org/files/htdocs/publications/review/99/11/9911jb.pdf>
- [13] Chaudhry, I. S., Qamber, Y. and Farooq, F. 2012. Monetary policy, inflation and economic growth in Pakistan: Exploring the co-integration and causality relationships. *Pakistan Journal of Commerce and Social Science*, 6(2):332-347. Available at: <http://pakacademicsearch.com/pdf-files/ech/372/332-347%20Volume%206,%20No%202%202012.pdf>
- [14] Chinn, M. and Ito, H. 2015. *The Chinn-Ito Index – A de jure measure of financial openness*. Available at: [http://web.pdx.edu/~ito/Chinn-Ito\\_website.htm](http://web.pdx.edu/~ito/Chinn-Ito_website.htm)
- [15] Christiano, L., Eichenbaum, M. Evans, C. 1999. Monetary policy shocks: What have we learned and to what end? In *Handbook of Macroeconomics*, Edition 1, Volume 1, Chapter 2: 65-148. Elsevier ed. by J. Taylor, and M. Woodford. North Holland. DOI: 10.3386/w6400 Available at: <http://www.nber.org/papers/w6400.pdf>
- [16] Clarida, R., Gali J., and Gertler, M. 1998. Monetary policy rules and macroeconomic stability: Evidence and Some Theory. *NBER Working Paper*, 6442. Available at: <http://www.nber.org/papers/w6442.pdf>
- [17] Davoodi, H., Dixit, S., and Pinter, G. 2013. Monetary transmission mechanism in the East African Community: An empirical investigation. *International Monetary Fund Working Paper*, 39. Available at: <http://www.imf.org/external/pubs/ft/wp/2013/wp1339.pdf>
- [18] Dele, B. E. 2007. Monetary policy and economic performance of West African monetary zone countries. *Munich Personal RePEc Archive*, 4308. Available at: <https://mpra.ub.uni-muenchen.de/4308>
- [19] Dincer, N. N. and Eichengreen, B. 2014. Central bank transparency and independence: Updates and new measures. *International Journal of Central Banking*, 10(1). March. Available at: <http://www.ijcb.org/journal/ijcb14q1a6.pdf>
- [20] Elliott, G., Rothenberg, T. J., and Stock, J. H. 1996. Efficient tests for an autoregressive unit root. *Econometrica*, 64: 813-36. Available at: <http://www.jstor.org/stable/2171846>
- [21] Fasanya, I. O., Onakoya, A. B. O., and Agboluaje, M. A. 2013. Does monetary policy influence economic growth in Nigeria? *Asian Economic and Financial Review*, 3(5). Available at: <https://pdfs.semanticscholar.org/df40/ae93f17a00a4c7c22aefadbc19ea271ce0.pdf>
- [22] Fernald, J., Spiegel, M. M., and Swanson, E. 2013. Monetary and fiscal policy effectiveness in China: Evidence from a FAVAR Model. *Federal Reserve Bank of San Francisco*, December. Available at: <http://www.frbsf.org/economic-research/files/wp2014-07.pdf>
- [23] Fosu, E. O. A., and Magnus, F. J. 2006. Bounds testing approach to cointegration: An examination of foreign direct investment trade and growth relationships. *American Journal of Applied Sciences*, 311: 2079-2085. Available at: <http://thescipub.com/PDF/ajassp.2006.2079.2085.pdf>
- [24] Grace Li, B., O'Connell, C., Adam, C., Berg, A. and Montiel, P. 2016, VAR meets DSGE: Uncovering the Monetary Transmission Mechanism in Low-Income Countries *IMF Working Paper*, 90. Washington, D.C. Available at: <https://www.imf.org/external/pubs/ft/wp/2016/wp1690.pdf>

- [25] Haddad, M., and Pancaro, M. 2010. Can Real Exchange Rate Undervaluation Boost Exports and Growth in Developing Countries? Yes, But Not for Long. *Economic Premise* 20, World Bank PREM Network, June. Available at: <http://siteresources.worldbank.org/INTPREMNET/Resources/EP20.pdf>
- [26] Hayashi, F. 2000. *Econometrics*. Princeton University Press, Princeton and Oxford. Available at: <https://docs.google.com/viewer?a=v&pid=sites&scid=ZGVmYXVsdGRvbWFpbnxY29ub21ldHJpY3NpdGFfGd4OjYyMTU3YjczNWlwZTRkZjI>
- [27] Ivrendi, M., and Guloglu, B. 2010. Monetary shocks, exchange rates and trade balances: Evidence from inflation targeting countries. *Economic Modelling*, 27: 1144–1155. Available at: <http://dx.doi.org/10.1016/j.econmod.2010.03.005>
- [28] Ivrendi, M. and Yildirim, Z. 2013. Monetary policy shocks and macroeconomic variables: evidence from fast growing emerging economies. *Economics Discussion Papers*, 61, Kiel Institute for the World Economy. Available at: <http://www.economics-ejournal.org/economics/discussionpapers/2013-61>
- [29] Kamaan, C, K. 2014. The effect of monetary policy on economic growth in Kenya. *International Journal of Business and Commerce*, 3, 8, April. Available at: <http://www.ijbcnet.com/3-8/IJBC-14-3802.pdf>
- [30] Kinyua, J. K 2001. Monetary Policy in Kenya: Evolution and current framework, *Central Bank of Kenya*. Available at: <https://www.centralbank.go.ke>
- [31] Levine, R., and Renelt, D. 1992. A Sensitivity Analysis of Cross-Country Growth Regressions. *The American Economic Review*, 82(4): 942-963. Available at: <http://0-www.jstor.org.oasis.unisa.ac.za/stable/2117352>
- [32] Mankiw, N. G., Romer, D., and Weil, D. N. 1992. A Contribution to the Empirics of Economic Growth. *The Quarterly Journal of Economics*, 107(2): 407–437. Available at: <http://www.jstor.org/stable/2118477>
- [33] Mansouri B. 2005. *The interactive impact of FDI and trade openness on economic growth: Evidence from Morocco*. Paper presented at the 12<sup>th</sup> Economic Research Forum (ERF) Conference, Cairo. Available at: [https://www.gate.cnrs.fr/uneca07/communications%20pdf/Mansouri-Paper\\_UNECA\\_07.pdf](https://www.gate.cnrs.fr/uneca07/communications%20pdf/Mansouri-Paper_UNECA_07.pdf)
- [34] Maturu, B., Maana, I., and Kisinguh, K. 2010. Monetary policy transmission mechanism in Kenya: a VAR Approach. *Central Bank of Kenya Working Paper*. Available at: <https://www.centralbank.go.ke>
- [35] Mishra, P., Montiel, P., and Spilimbergo, A. 2012. Monetary transmission in Low-Income Countries: Effectiveness and policy implications. *International Monetary Fund Economic Review* 60: 270-302.
- [36] Montiel, P. 2013. The Monetary transmission mechanism in Uganda. *International Growth Centre Working Paper*, mimeo. Available at: <http://www.theigc.org/wp-content/uploads/2014/11/Montiel-2013-Working-Paper.pdf>
- [37] Morekwa, E. Nyamongo, Moses M. asichei and Nahanson K. Mutai. *The monetary and fiscal policy interactions in Kenya*. Research department. Central Bank of Kenya. Available at: <https://www.centralbank.go.ke>
- [38] Mugume, A. 2011. Monetary transmission mechanisms in Uganda. *Bank of Uganda Working Paper*. Available at: <http://www.bou.or.ug/bou/home.html>
- [39] Mutuku, C., and Koech, E. 2014. Monetary and fiscal policy shocks and economic growth in Kenya: VAR econometric approach. *Journal of World Economic Research* 3(6): 95-108. Available at: <http://dx.doi.org/10.11648/j.jwer.20140306.14>
- [40] Nogueira, R. P. 2009. Is monetary policy really neutral in the long-run? Evidence for some emerging and developed economies. *Economics Bulletin*, 93: 2432-2437. Available at: <http://www.accessecon.com/Pubs/EB/2009/Volume29/EB-09-V29-I3-P88.pdf>

- [41] Nyamongo, E. and Ndirangu, L. 2013. Financial Innovations and Monetary Policy in Kenya. *MPRA*, 52387. Available at: <http://mpra.ub.uni-muenchen.de/52387/>
- [42] Obstfeld, M., and Taylor, A. M. 2003. Globalization and Capital Markets. *NBER Chapters*, 121-188, NBER. Available at: <http://www.nber.org/chapters/c9587.pdf>
- [43] Odhiambo, N.M. 2009. Energy Consumption and economic growth nexus in Tanzania: An ARDL bounds testing approach. *Energy Policy*, 37: 617-622. Available at: <http://dx.doi.org/10.1016/j.enpol.2008.09.077>
- [44] Ouattara, B. 2004. *Foreign aid and fiscal policy in Senegal*. Mimeo University of Manchester. Available at: <https://www.nottingham.ac.uk/credit/documents/papers/04-05.pdf>
- [45] Opolot, J., Nampewo, D, Ntumwa, C. A., and Nyanzi, S. 2013. Financial architecture and monetary policy transmission mechanisms in Uganda. *Bank of Uganda Working Paper*, 02, Available at: <http://www.bou.or.ug/bou/home.html>
- [46] Palley T. I. 2007. Macroeconomics and monetary policy: Competing theoretical frameworks. *Journal of Post Keynesian Economics*, 30(1): 61-78. Available at: <http://www.tandfonline.com/doi/abs/10.2753/PKE0160-3477300103>
- [47] Pesaran, M. H., and Shin, Y. 1999. An autoregressive distributed lag modelling approach to cointegration analysis, in *Econometrics and Economic Theory in the 20<sup>th</sup> Century: The Ragnar Frisch Centennial Symposium*, Storm, S. Ed., Cambridge University Press, Chapter 11, 1–31.
- [48] Pesaran, M. H., Shin, Y., and Smith, R. 2001. Bound testing approaches to the analysis of level relationship. *Journal of Applied Econometrics*, 16(3): 174–189. Available at: <http://www.jstor.org/stable/2678547>
- [49] Pollin, R., and Zhu, A. 2006. Inflation and economic growth: A cross-country nonlinear analysis. *Journal of Post Keynesian Economics*, 28(4): 593-614. Available at: <http://www.tandfonline.com/doi/abs/10.2753/PKE0160-3477280404>
- [50] Rafiq, S. M., and Mallick, K. S. 2008. The effect of monetary policy on output in EMU3. A sign restriction approach. *Journal of Macroeconomics*, 30: 1756–1791. Available at: <http://dx.doi.org/10.1016/j.jmacro.2007.12.003>
- [51] Rodríguez, F. R., and Rodrik, D. 2001. Trade policy and economic growth: A skeptic's guide to the cross-national evidence. *NBER Macroeconomics Annual*, 15: 261-338. Available at: <http://www.nber.org/chapters/c11058.pdf>
- [52] Rodrik, D. 2008. The Real Exchange Rate and Economic Growth. *Brookings Papers on Economic Activity*, 39(2): 365–439. Available at: [https://www.brookings.edu/wp-content/uploads/2008/09/2008b\\_bpea\\_rodrik.pdf](https://www.brookings.edu/wp-content/uploads/2008/09/2008b_bpea_rodrik.pdf)
- [53] Sachs, J. and Warner, A. 1995. Economic reform and the process of global integration. *Brookings Papers on Economic Activity*, 1: 1-117. Available at: [https://www.brookings.edu/wp-content/uploads/1995/01/1995a\\_bpea\\_sachs\\_warner\\_aslund\\_fischer.pdf](https://www.brookings.edu/wp-content/uploads/1995/01/1995a_bpea_sachs_warner_aslund_fischer.pdf)
- [54] Starr, M. 2005. Does money matter in the CIS? Effects of monetary policy on output and prices. *Journal of Comparative Economics*, 33: 441-461. Available at: <http://dx.doi.org/10.1016/j.jce.2005.05.006>
- [55] Sturgill, B. 2014. Money growth and economic growth in developed nations: An empirical analysis. *Journal of Applied Business and Economics*, 16(4). Available at: [http://www.na-businesspress.com/JABE/SturgillB\\_Web16\\_4\\_.pdf](http://www.na-businesspress.com/JABE/SturgillB_Web16_4_.pdf)
- [56] Walsh, C. E. 2003. *Monetary Theory and Policy*. Partea 5; 199-216. The MIT Press, Second Edition.

- [57] White, W. R. 2013. Is Monetary Policy a Science? The Interaction of Theory and Practice over the Last 50 Years. *Federal Reserve Bank of Dallas, Globalization and Monetary Policy Institute Working Paper*, 155. September. Available at: <http://www.dallasfed.org/assets/documents/institute/wpapers/2013/0155.pdf>
- [58] Woodford, M. 2007. The case of forecast targeting as monetary policy strategy. *Journal of Economic Perspectives*, 21(4): 3-24. Available at: <https://core.ac.uk/download/pdf/27297863.pdf>
- [59] Yilmazkuday, H. 2013. Inflation thresholds and growth. *International Economic Journal*, 27(1): 1-10. Available at: <http://dx.doi.org/10.1080/10168737.2012.658831>
- \*\*\* Central Bank of Kenya 2013a. Annual Financial stability report, June. Available at: <https://www.centralbank.go.ke/index.php/news/378-financial-2013-report>
- \*\*\* Central Bank of Kenya 2013b. Annual supervision report. Available at: <https://www.centralbank.go.ke/index.php/bank-supervision-reports>
- \*\*\* FinAccess 2013. Profiling developments in financial access and usage in Kenya. Available at: [http://fsdkenya.org/wp-content/uploads/2015/08/13-10-31\\_FinAccess\\_2013\\_Report.pdf](http://fsdkenya.org/wp-content/uploads/2015/08/13-10-31_FinAccess_2013_Report.pdf)
- \*\*\* International Monetary Fund. 2016. Regional Economic Outlook: Sub-Saharan Africa. Washington D.C. April. Available at: <https://www.imf.org/external/pubs/ft/reo/2016/afr/eng/pdf/sreo0416.pdf>
- \*\*\* Kenya Institute for Public Policy Research and Analysis KIPPRA. 2013, Kenya Economic Report: Creating an Enabling Environment for Stimulating Investment for Competitive and Sustainable Counties. Available at: <http://kippra.or.ke/downloads/Kenya%20Economic%20Report%202013.pdf>
- \*\*\* World Bank. 2015. World Development Indicators 2015. Available at: [www.worldbank.org](http://www.worldbank.org)

Appendix A: Graphical expositions of the time series variable data





## Formation of the Production System Elements and R&D Product Development Processes in the Early Stages of the Project

Ekaterina P. GARINA  
Kozma Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia  
[keo.vgipu@mail.ru](mailto:keo.vgipu@mail.ru)

Viktor P. KUZNETSOV  
Kozma Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia  
[keo.vgipu@mail.ru](mailto:keo.vgipu@mail.ru)

Dmitry N. LAPAEV  
Nizhny Novgorod State Technical University, Nizhny Novgorod, Russia  
[dnlapaev@mail.ru](mailto:dnlapaev@mail.ru)

Elena V. ROMANOVSKAYA  
Kozma Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russia  
[keo.vgipu@mail.ru](mailto:keo.vgipu@mail.ru)

Sergey N. YASHIN  
N.I. Lobachevsky Nizhny Novgorod state University, Nizhny Novgorod, Russia  
[jashinsn@yandex.ru](mailto:jashinsn@yandex.ru)

### Suggested Citation:

Garina E.P., Kuznetsov V.P., Lapaev D.N., Romanovskaya E.V., Yashin S.N. 2017. Formation of the production system elements and R&D product development processes in the early stages of the project. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 538 – 544.

### Abstract:

The article is devoted to study and synthesis of design practices, integrated product development (IPD-concept), which is a process of multi-dimensional adaptive integration of interaction of all participants in the system (business systems). Process within the framework of the establishment of high-tech product, which is on early involvement of all its participants, alignment of goals and interests, the allocation of risk and reward, and balanced processes (business process and technological process) when, implementing the common objectives for the project. Integrated approach helps to ensure a higher level of completion of the work on early stages, that is, save efforts to follow up and maintenance documentation for subsequent phases of the project. In domestic practice, despite the benefits allocated IPD implementation projects in practice is limited for several reasons: 1) Technical and organizational problems. Requires the unification of production systems, as well as industrial/technology management participants of integration system; the formation of a unified system of redistribution of resource flows between participants; reducing "conflict" on the joints and other productions; 2) unwillingness of domestic manufacturers pass on "deep integration" between the parties, from the initial design stage.

The article touches on issues covered in the following aspects: determination of directions of the development of production systems through the analysis of the structure of the product; through improved efficiency of technological production flows.

**Keywords:** production; research and development; business process; production system; concept.

**JEL Classification:** M2; O32.

### Introduction

#### Statement of the problem or tasks in the general form

Back in the mid-20<sup>th</sup> century with the development of an industrial product (like a tangible product or result of any technological/business process) are actively used concept of design processes in parallel (Concurrent Engineering) developed by Japanese manufacturers after World War II. The idea of authors was in combining design and manufacturing practices through integrated collaborative product design and related substantive and support

processes (Romanovskaya *et al.* 2016). Organization of complicated industrial complexes within the concurrent engineering at that time allowed obtaining higher quality products at lower cost and in less time than ever before. However, the increase in the complexity of production and dynamical market; substantial changes to queries of buyers at the turn of the 1980's-1990's (emphasis on cost, availability, reliability, and quality) on philosophy of production (flexibility, reaction to the request of the consumer, reduction of product life cycle cost reduction) have given rise for further development of the production philosophy. In particular, Hansen first proposed a supplement to the CE concept in 1976, the year when developing a methodology for systematic product development. In addition, in 1988 on practice - United States Department of Defense, which, has mastered the technological solutions according to the parallel organization of production and planning projects creation of sophisticated high-tech products, attracted further interdisciplinary component of the integrated industrial product development process by creating a methodological support for dynamical process of product development. Integrated engineering design of production processes, production systems and R&D-product development processes within the overall business strategy of the enterprise were complemented by processes of logistics, management operations, etc. In the 1990, the idea of an integrated project execution is widely used in the construction industry. Moreover, in the 2007 the American Institute of architects gave her a meaningful description, identifying the main project participants: owners, designers (architects and engineers), contractors.

This experience contributed to the concept of integrated product development (IPD-concept), the essence of which is to establish production environment, where product development is implemented as multidisciplinary/iterative process. In 1990-2000's IPD concept have been developed almost simultaneously: Rosenberg (Rosenberg 1996), which identified set of elements and processes associated with product development in the construction industry. In continuation of his works, Jehanikal a leading element in the product creation system outlined as a way of organizing production. A more detailed description of the elements of production/product development given in the writings of Skallen and Swift. Which describe the sequence of technological elements of the process of creating a product in the context for developing production; Pahl (Pahl and Beitz 1998), proposing to structure the process of designing and manufacturing of a product through the provision of a system of project items. Transition from one element to another, according to Cooper, (Ulrich 1994) and Gates must be accessed through the "gate" or "gateways"-checkpoints that allow developers to take to the fixed point's decision to go ahead to next stage in the process. With options to remake created product or stop the project generally unpromising; Kotler (Sadov 2008). The elements of the marketing process are important, while selecting the optimal values of the product. In addition, Skallen (Romanovskaya *et al.* 2016) emphasized the importance of the process of selling items at the end of the product development process; also Russell and Reid (Piller and Waringer) provided methodological substantiation of operational management, part of the development process of production.

However, despite the relatively wide range of studies, the majority of modern scientists focus on one of the areas of product design and development: the institutional aspect, engineering and operations management. From an organizational point of view, the authors studied mainly by a combination of factors; determinants for successful project within the framework of the organization of production and technological processes. In their view, structure, being a form of the system is determined by its content, *i.e.* the processes that occur in the system. The technological aspect is more detailed and the emphasis is on individual product engineering solutions (*e.g.*, design and simulation). Parametric optimization of complex engineering models is well-developed area within the design, but does not give flexibility to respond when consumer preferences are changing. However, the disadvantage of these approaches in that product model constituted like a bundle of attributes, and tend to ignore the existing limitations in the technology of production of the primary product in existing production systems manufacturer.

The objective of study is to develop elements of production system and R&D-product development processes in the early stages of the project in the context of growing interdependence of members of the system and increase the complexity of the production of the product produced as a result.



## Conclusion

Changing priority of production component, *i.e.* organizing production under the generated product allowing us to receive such structure, which focuses on the effective organization of the production system. This model of product structure in the early stages of the formation of production system can identify effective ways of allowing rearmament of enterprises with the lowest cost.

Product design decisions and design of production systems in the early stages of the project allow you to improve efficiency by reducing errors in the early stages (coordination, faulty manufacture, assembling, and installation accuracy). For example, the production system can be generated by the change of conditioning production line integration or differentiation of the production lines and the replacement of the impact characteristic of the product.

Early cooperation between designers and production engineers solves the problem of fragmentation between design and manufacturing that, in practice, leads to costly changes in the final stage of the project. Early cooperation does not require the use of certain technical means. However, it is important to note that information technologies can greatly enhance the effectiveness of cooperation in all phases of the project. The aim is to reduce costs and increase efficiency by avoiding duplication of functions. The integration of members of the system is carried out through:

- involvement of the participants in a set of interrelated technological transitions in the context of a single process of product development and production preparation;
- organization of unified design and technological documentation, common technical electronic document circulation systems, the exchange of information on routes, technologies of manufacturing products between the parties; and in the long term is through the formation of logistic chain within a functional product lifecycle.

## References

- [1] Andreeva, O. B., Sadov, V. A. 2008. *The formation of the elements of the production system at the level of production*. Herald of the Kostroma State Technological University, 17: 90-93.
- [2] Caesar, C. 1991. *Kostenorientierte Gestaltungsmethodik für variantenreiche Serienprodukte-Variant Mode and Effects Analysis (VMEA)*: dissertation RWTH Aachen. Aachen. Düsseldorf: VDI-Verl.
- [3] Erixon, G. 1998. *Modular Deployment Funktion-A method for product modularization: doctoral thesis*. Royal Institute of Technology (KTH); Dept.of Manufacturing Systems. Sweden. Available at: <https://modularmanagement.com/wp-content/uploads/2015/05/Modular-Function-Deployment-A-Method-for-Product-Modularization.pdf>
- [4] Garina, E., S., Kuznetsova, E., Semakhin, S., A. 2015. Helpful Family Hotel Staff. Sevryukova, Development of National Production through Integration of Machine Building Enterprises into Industrial Park Structures. *European Research Studies*, 18: 267-282.
- [5] Jashin, S. N., Ohezina, G. M. 2015. Methods of evaluating the quality of the project implementation planning process innovation at industrial enterprises. *Finance and Credit*, 34(658): 90 - 93.
- [6] Kuznetsov, V., Romanovskaya, E., Vazyansky, A., Klychova, G. 2015. Internal Enterprise Development Strategy. *Mediterranean Journal of Social Sciences*, 6(1): 444 - 447.
- [7] Martin, M., Ishii, K. 1996. *Design for Variety*. ASME Design Engineering Technical Conferences and Computers in Engineering Conference, 22-28 Aug.
- [8] Pahl, G., Beitz, W. 1988. *Engineering Design: A Systematic Approach*. Springer Verlag London. DOI: 10.1007/978-1-84628-319-2

- [9] Piller, F., Waringer, D. 1999. Modularisierung in der Automobilindustrie neue Formen und Prinzipien. - Modular Sourcing, Plattformkonzept und Fertigungssegmentierung als Mittel des ... (Berichte aus der Betriebswirtschaft). Taschenbuch. Aachen: Shaker Verlag. ISBN: 978-3826558276
- [10] Romanovskaya, E., Garin, A., Dalidovich, K., Lapygin, Y. 2016. Optimization of inventory management in the supply chain based on the process approach. *Vestnik of Minin University*, 1-1 (13): 13-18.
- [11] Strassmann, W. P. 1976. Perspectives on Technology. by Rosenberg Nathan. Cambridge: Cambridge University Press, pp. 353. *The Journal of Economic History*. 37(2): 559-560. DOI: <https://doi.org/10.1017/S0022050700097655> - Reviews of Books
- [12] Sadov, V., A. 2008. The formation of the elements of the production system at the level of production. *Herald of the Kostroma State Technological University*, 17: 90-93.
- [13] Ulrich, K., T. 1994. *Methodologies for Product Design and Development*. k. t. Ulrich, s. d. Eppinger. New York: McGraw-Hill.
- \*\*\* Integrated project delivery: a guide, American Institute of Architects, 2007, 62 p. Available at: [http://info.aia.org/siteobjects/files/ipd\\_guide\\_2007.pdf](http://info.aia.org/siteobjects/files/ipd_guide_2007.pdf)

## Innovation Management in the Oil and Gas Industry of the Republic of Kazakhstan

Anel D. YELEUKULOVA

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
[aneka\\_010@mail.ru](mailto:aneka_010@mail.ru)

Kasiya A. KIRDASINOVA

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
[marso310@mail.ru](mailto:marso310@mail.ru)

Mafura K. UANDYKOVA

“Narxoz” University, Almaty, Kazakhstan  
[umk63@mail.ru](mailto:umk63@mail.ru)

Nikolay V. UVITSA

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
[juwmet@yandex.ru](mailto:juwmet@yandex.ru)

Muratpek V. MUKHAMBEKOV

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
[aibek-mur@mail.ru](mailto:aibek-mur@mail.ru)

Venera T. BALGABAYEVA

L.N. Gumilyov Eurasian National University, Astana, Kazakhstan  
[vtbal@list.ru](mailto:vtbal@list.ru)

Aida M. BALKIBAYEVA

S. Seifullin Kazakh Agro Technical University, Astana, Kazakhstan  
[ambal1974@mail.ru](mailto:ambal1974@mail.ru)

### Suggested Citation:

Yeleukulova, A. D., Kirdasinova, K. A., Uandykova, M. K., Uvitsa, N. V., Mukhambekov, M. V., Balgabayeva, V. T., Balkibayeva, A. M. 2017. Innovation management in the oil and gas industry of the Republic of Kazakhstan. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 545 – 557.

### Abstract:

Up until now, the oil and gas industry formed almost a third of the gross domestic product of Kazakhstan. In addition to stable cash inflows to the state budget, oil and gas companies provide infrastructural development of the regions and the development of other sectors of the Kazakh economy; therefore, study and research of the republic's oil and gas industry in the current environment is quite relevant.

This article provides a literature review of domestic and foreign authors, who conducted study of innovation management, and oil and gas industry in various aspects of economic development of the world economy. The article gives an analytical overview of the current condition and future directions of oil and gas industry in Kazakhstan. Characteristic features of administrative processes in the real economy have been portrayed. The authors of the article studied the conceptual approaches to oil and gas factory control based on the state support for the development of priority sectors, including for investment attraction. Due to conducted research, the following results have been produced: theoretical and methodological aspects of the study of the system of oil and gas factory of the Republic of Kazakhstan systematized, based on which the conclusions are made to improve the management oil and gas factory of the republic.

**Keywords:** state's economy; export, import; oil, gas; investments.

**JEL Classification:** M11 ; N5 ; P48.

### Introduction

Oil and gas industry has a decisive impact on the socio-economic development of the country and state's regions, in fact, it is a locomotive for the whole economy of the state, and it contributes to the development of other sectors of the economy. Operation of oil and gas companies related to implementation of the most important social programs across the region and the entire state (Ashimbayev and Kurganbaeva 2002). In 2014, production in Kazakhstan was 2488.2 thousand tons or 110.6% against 2013's production level. Of these, about 2 million tons were exported to other countries. The level of development of the oil and gas sector is today one of the most important factors determining the level of economic development of Kazakhstan. Based on the importance of the oil and gas, it can be concluded that the research topic is quite relevant, the results of which are presented in this article.

## Conclusion

Search of ways to improve the organizational and economic mechanism of industrial-innovative development of the Republic of Kazakhstan enable to come to the following conclusions:

- the state policy in the field of development of innovation system is implemented in the following areas: the creation of favorable economic and legal environment towards innovation; formation of innovation infrastructure;
- problems of innovative technologies in the industry are key points to the most industrialized countries;
- taking into account the experience of developed countries, and taking into account the real condition of the domestic economy, Kazakhstan has to define its vector of innovative development;
- developing a coherent policy in the management of science and innovation with corporate interaction as participants in the innovation process is the main priority of the country's main strategy;
- based on the study of international experience and technological development and the development of competitiveness and review the level of technological development of Kazakhstan by further accelerated development involves the purposeful introduction of the latest technologies in order to enable access to global competitiveness. Development of new technologies involves the creation and updating of modern material and technical base, the formation of an effective infrastructure for the introduction of technologies in production, the use of world achievements in the field of efficient management of the production process;
- the priorities of industrial and innovation policy are the development and creation of competitive potential, including export-oriented, industries.

The main objectives of the state of oil and gas sector are as follows: firstly, the provision of sufficient hydrocarbon resource base; secondly, the development of oil and gas industry on the basis of a competitive service industry in the framework of reducing the raw material orientation of the economy. The expansion of the resource base in the oil and gas industry will be combined extensive and intensive approaches. The extensive approach will be carried out search and the involvement of the industrial new fields of hydrocarbon resources. Intensive approach is widely used methods to increase oil production in the producing fields.

As the result of studies that deepened theoretical and methodological foundations of functioning and development of the system of oil and gas sector of the Republic of Kazakhstan, the following conclusions have been composed:

- the adoption of a set of measures for legislative support and assisting the industry;
- funding of research and development and exploration activities, including from the state budget and the National Welfare Fund;
- preparation of highly qualified technical staff that will ensure the ongoing development of new industries in Kazakhstan;
- providing tax breaks and incentives;
- the increase in prices in the domestic market and / or direct subsidies on gas prices, coupled with the provision of the annual guaranteed volume of gas consumption by the large enterprises and the public.

In the context of depletion of mature fields and the need for research into new geological formations, often in areas with complex environmental, geographic and climatic conditions of particular importance is the innovation potential of companies operating in the sector. The key measure in this direction will be the most extensive use of experience of companies working in Kazakhstan and ensuring the transfer of foreign technologies in enhancing the efficiency of hydrocarbon production.

## References

- [1] Ahriev, J. K. 2002. *Questions of corporate planning methodology for petroleum products*. Moscow: Publishing House MELAP.
- [2] Alekperov, V. Y. 2011. *Russian Oil: past, present and future*. Moscow: Creative Economy.

- [3] Alshanov, R. A. 2005. *Kazakhstan in the world mineral commodities market: problems and solutions (analysis and prediction)*. Almaty.
- [4] Ashimbayev, M. S. and Kurganbaeva, G. A. 2002. *Oil and Gas Resources of Kazakhstan in the System of International and Regional Relations*. Astana: Kazakhstan Institute of Strategic Study.
- [5] Blizky, R. S. 2015. Resource conservation and transparency of relations under current economic development. *Actual Problems of Economics*, 9(171): 108-113.
- [6] Egorov, O. I. and Zhumagulov, R. B. 2016. Balanced use of oil and gas resources as a priority development of the industry. *Oil and Gas Magazine*, 1: 3.
- [7] Egorov, O. I., Chigarkina, O. A. and Baimukanov, A. S. 2003. *Oil and Gas Complex of Kazakhstan: problems of Development and Effective Functioning*. Astana: Kazakhstan Institute of Strategic Study.
- [8] Golova, I. M. and Sukhovey, A. F. 2015. Innovation and technological development of industrial regions in terms of socio-economic instability. *Economics of the Region*, 1: 131-144.
- [9] Haydargalieva, T. T. 2015. The development of innovative potential of the oil and gas sector (foreign experience). *Bulletin of the Karaganda University*, 15(48): 56-65.
- [10] Kairbekova, M. N. 2013. Priorities for improving the competitiveness of the oil and gas complex of the Republic of Kazakhstan. *"Turan" University Bulletin*, 3(59): 127-131.
- [11] Kolosova, O. G. 2011. The mechanism of realization of social partnership in the oil and gas sector. *Russian Entrepreneurship*, 1(175): 68-73.
- [12] Kuladzhi, T. V. and Iskichekova, N. V. 2014. Clusters as an important tool to promote innovation. *"Turan" University Bulletin*, 4 (54): 57-64.
- [13] Makov, V. M. 2010. Analysis of innovation and investment activity of the enterprises of oil and gas complex. *Creative Economy*, 1 (37): 126-129.
- [14] Muradverdiyev, L. A. 2013. Improving the efficiency of functioning of the oil and gas industry of Azerbaijan. *Russian Entrepreneurship*, 24(246): 91-99.
- [15] Nursultanova, L. N. 2008. The investment policy of Kazakhstan in the oil and gas industry. *Questions of History of Kyrgyzstan*, 2: 51-56.
- [16] Paytaeva, K. T. 2012. Environmental and economic analysis of the oil and gas industry. *Terra Economicus*, 4(10): 80-83.
- [17] Rahmetulina, J. B. and Tselovalnikova, O. B. 2014. Innovative way of development of Kazakhstan. *"Turan" University Bulletin*, 2(62): 29-34.
- [18] Skipin, D. L. 2014. Innovative activity as the factor of clustering of the regional economy (on the materials of the Tyumen region). *Creative Economy*, 11(95): 84-94.
- [19] Smagulova, S. M. 2005. *Oil and gas companies of Kazakhstan and foreign economic relations*. Moscow: The company Sputnik +.
- [20] Tatarkin, A. I. and Romanov, O. A. 2014. Industrial policy: genesis, regional features and legislative support. *Economics of the Region*, 2: 9-21.
- [21] Zholdybaev, N. T. 2004. *Cluster development of oil refining sector in Kazakhstan as a strategic priority of economic growth*. Proceedings of the international scientific-practical conference "Modern problems of economic growth of national economies. National, regional and sectoral aspects in the context of globalization and modernization". Karaganda.

## Statistical Simulation of Break-Even Point in the Margin Analysis of the Company

Aleksandr Mikhaylovich BATKOVSKIY  
Joint Stock Company "Central Research Institute of Economy  
Management and Information Systems "Electronics", Moscow, Russia  
[batkovskiy\\_a@instel.ru](mailto:batkovskiy_a@instel.ru)

Elena Georgievna SEMENOVA  
Institute of Innovation and Basic Postgraduate Training  
Saint-Petersburg State University of Aerospace Instrumentation, St. Petersburg, Russia  
[egsemenova@mail.ru](mailto:egsemenova@mail.ru)

Valeriy Yaroslavovich TROFIMETS  
Department of Higher Mathematics and Systems Modeling of Complex Processes  
Saint-Petersburg University of State Fire Service of Emercom of Russia, St. Petersburg, Russia  
[zemifort@inbox.ru](mailto:zemifort@inbox.ru)

Elena Nikolaevna TROFIMETS  
Department of Higher Mathematics and Systems Modeling of Complex Processes  
Saint-Petersburg University of State Fire Service of Emercom of Russia, St. Petersburg, Russia  
[ezemifort@inbox.ru](mailto:ezemifort@inbox.ru)

Alena Vladimirovna FOMINA  
Joint Stock Company "Central Research Institute of Economy  
Management and Information Systems "Electronics", Moscow, Russia  
[fomina\\_a@instel.ru](mailto:fomina_a@instel.ru)

### Suggested Citation:

Batkovskiy, A. M., Semenova, E. G., Trofimets, V. Y., Trofimets, E. N., Fomina, A. V. 2017. Statistical simulation of break-even point in the margin analysis of the company. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 558 – 570.

### Abstract:

The article defines the role and place of the task of finding the break-even point in margin analysis of a company's activity. The basic assumptions and limitations of the main known methods in this field have been formulated. In order to develop the theoretical and practical aspects of solving the given task, the authors have suggested an approach to determining the break-even point based on imitative statistical simulation (Monte Carlo method). The proposed approach is based on a logical scheme of imitative statistical simulation, adapted for completing the task of finding the break-even point. The logical scheme is brought to the level of practical implementation in the form of a computer model in the environment of MS Excel spreadsheet that includes three sub-models: a break-even point calculation model, based on the known calculating ratios of the margin analysis; a random factors impact model specifying different laws for the distribution of random variables; a statistical processing that model includes a module for calculating typical statistical characteristics (average deviation, standard deviation, confidence intervals, etc.), and a module for selecting and viewing scenarios with the most relevant values of output indicators, which are most consistent with the current production and market conditions.

**Keywords:** margin analysis; break-even point; imitation statistical simulation; Monte Carlo method; computer simulation.

**JEL Classification:** C10; C18; C40; C51.

### Introduction

Margin analysis is one of the relatively simple and at the same time highly effective methods of justifying management decisions in the financial and economic activities of an enterprise. The methodology of margin analysis is based on the study of the correlation between three groups of the most important economic indicators: costs, volume of production (sales) and profit, and forecasting the value of each of these indicators for the given

value of others. This method is based on the division of production and marketing costs into variable and fixed costs, depending on the change in production volume, as well as using the category of marginal revenue.

The key features of margin analysis consist in determining the volume of sales, which ensures receiving the planned amount of profit; in forecasting a change in profit (marginal revenue) for the given change in the volume of sales; and in the definition of break-even sales volume and the security zone of an enterprise. In addition, the use of margin analysis allows you to form an optimal range of products, to justify the viability of accepting an additional order at prices lower than usual, to justify the choice of equipment and production technologies, to take into consideration the resource constraints in the production of goods, to determine the price of a new product and the viability of adjusting the current price thus making it higher or lower, to select the most profitable correlation between variables and fixed costs, prices and sales volumes.

## Conclusion

Determining the break-even point is an important element in the margin analysis of an enterprise's activity. At the same time, it is necessary to consider the following circumstances:

- first, a change in fixed costs changes the position of the break-even point, but does not change the size of the marginal revenue;
- second, a change in variable costs per unit of production changes the indicator of the marginal revenue and the location of the break-even point;
- third, simultaneous change of fixed and variable costs in the same direction causes a strong shift of the break-even point;
- fourth, a change in sales price changes the margin revenue and the location of the break-even point.

Thus, marginal revenue and the break-even point are among of the most informative indicators in making decisions related to the costs and revenues of an enterprise. The practical testing of the proposed method and the computer model was carried out through the example of finding break-even points of enterprises in the chemical and construction industries. The authors give an example of calculating the break-even point of the enterprise "Inzhbeton", specializing in the production and delivery of ready-mixed concrete.

## Acknowledgements

The study was supported by the Russian Foundation for Basic Research (project RFBR No. 16-06-00028).

## References

- [1] Abdulkarimov, I.T. 2013. The break-even point and safety margin, methods of their evaluation, role and importance in planning of profits. *Socio-Economic Phenomena and Processes*, 10 (56): 7-14.
- [2] Alastair D, J. 2015. *Mastering Financial Mathematics in Microsoft Excel*. FT Press.
- [3] Alhabeeb, M.J. 2012. *Mathematical Finance*. Wiley.
- [4] Atkinson, E.A., and Kaplan, R.S. 2005. *Management Accounting*. Moscow: Vilyams.
- [5] Avon, J. 2015. *The Basics of Financial Modeling*. Apress.
- [6] Badiru Adedeji, B., and Omitaomu Olufemi, A. 2007. *Computational Economic Analysis for Engineering and Industry*. CRC Press.
- [7] Back, K., Bielecki, T.R., Hipp, C., Peng, S., Schachermayer, W. 2004. *Stochastic Methods in Finance*. Springer. DOI: 10.1007/b100122
- [8] Batkovskiy, A.M., Konovalova, A.V., Semenova, E. G, Trofimets, V.Ya., and Fomina, A.V. 2015. Study of Economic Systems Using the Simulation-Based Statistical Modeling Method. *Mediterranean Journal of Social Sciences*, 6, 4 S4: 369-380. DOI: 10.5901/mjss.2015.v6n4s4 p.369
- [9] Batkovskiy, A.M., Semenova, E. G, Trofimets, V.Ya., Trofimets, E.N., and Fomina, A.V. 2016. Computer Modeling of Leasing Operations. *Indian Journal of Science and Technology*, 9(27): 85-95. DOI: 10.17485/ijst/2016/v9i28 /97661
- [10] Bragg, S.M. 2010. *Cost Reduction Analysis: Tools and Strategies*. Wiley.
- [11] Brandimarte, P. 2014. *Handbook in Monte Carlo Simulation: Applications in Financial Engineering, Risk Management, and Economics*. Wiley.
- [12] Benninga, S. 2014. *Financial Modeling*. The MIT Press.
- [13] Bolviken, E. 2014. *Computation and Modelling in Insurance and Finance*. Cambridge University Press.
- [14] Chan, V. 2013. *Theory and Applications of Monte Carlo Simulations*. InTech.



- [15] Charnes, J. 2012. *Financial Modeling with Crystal Ball and Excel*. John Wiley and Sons.
- [16] Chin, E., Olafsson, S., and Nel, D. 2014. *Problems and Solutions in Mathematical Finance, Vol. I: Stochastic Calculus*. New York: Wiley.
- [17] Crepey, S. 2013. *Financial Modeling: A Backward Stochastic Differential Equations Perspective*. Springer.
- [18] Davis, C.E., and Davis, E. 2013. *Managerial Accounting*. Wiley.
- [19] Dranko, O.I. 2004. *Financial management. Technologies of managing a company's finances*. Moscow: JuNITI-DANA.
- [20] Dranko, O.I. 2010. Some ways of calculating the break-even point. *Management Accounting*, 7: 49-55.
- [21] Fairhurst, D.S. 2012. *Using Excel for Business Analysis*. Wiley.
- [22] Goossens, F. 2015. *How to Implement Market Models Using VBA*. Wiley.
- [23] Hilton, R.W., and Platt, D.E. 2013. *Managerial Accounting: Creating Value in a Dynamic Business Environment*. McGraw-Hill Education.
- [24] Kennedy, D. 2014. *Stochastic Financial Models*. New York: Chapman and Hall/CRC.
- [25] Kovalev, V.V., and Volkova, O.N. 2008. *Analysis of the Economic Activity of an Enterprise*. Moscow: Velbi, Prospekt.
- [26] Lanen, W., Anderson, S., and Maher, M. 2010. *Fundamentals of Cost Accounting*. McGraw-Hill/Irwin.
- [27] Lai, D.C.F., Tung, H.K.K., Wong, M.C.S. et al. 2010. *Professional Financial Computing Using Excel and VBA*. Wiley.
- [28] Lungu, A.G. 2012. The break-even point in assessing the economic condition of an enterprise. *Modern Economics: Problems and Solutions*, 11 (35): 45-50.
- [29] Nicolay, D. 2014. *Asymptotic Chaos Expansions in Finance: Theory and Practice*. Springer. DOI: 10.1007/978-1-4471-6506-4
- [30] Nosova, I.L. 2012. Comparative analysis of Direct Costing and Absorption Costing methods for managerial decision-making. *Methods of Analysis*, 29 (284): 17-24.
- [31] Romanova, A.N. 2009. Marginal approach in making managerial decisions. *An Economist's Reference*, 9 (75): 21-28.
- [32] Safarov, G.A., and Dzhaferova, N.Sh. 2016. Margin analysis and decision-making. *Oil, Gas and Business*, 7: 35-37.
- [33] Savitskaya, G.V. 2016. *Comprehensive analysis of the economic activity of an enterprise*. Moscow: Infra-M.
- [34] Shonkwiler, R.W. 2013. *Finance with Monte Carlo*. Springer.
- [35] Sengupta, C. 2004. *Financial Modeling using Excel and VBA*. Wiley.
- [36] Vecer, J. 2011. *Stochastic Finance: A Numeraire Approach*. New York: CRC Press.
- [37] Walther, L.M., and Skousen, C.J. 2010. *Job Costing. Managerial and Cost Accounting*. Bookboon.
- [38] Yankovskiy, K.P., and Muhar, I.F. 2011. *Management Accounting*. St. Petersburg: Piter [in Russian].

## Clusters: Sense of Market Approach to their Formation and Substantiation of Necessity for Development of Mathematical Apparatus for Modeling of their Development

Yana S. MATKOVSKAYA

Volgograd State Technical University, Volgograd, Russia

[yana.s.matkovskaya@gmail.com](mailto:yana.s.matkovskaya@gmail.com)

### Suggested Citation:

Matkovskaya, Y. S. 2017. Clusters: Sense of market approach to their formation and substantiation of necessity for development of mathematical apparatus for modeling of their development. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 571 – 581.

### Abstract:

Popularity of study of clusters in economic research grows. Thus, researchers direct their efforts for study of this economic phenomenon and practitioners – for realization of cluster approach in economies of particular regions. Territorial concentration is not always a condition for the formation of a cluster; besides, it cannot always ensure its competitiveness. That's why the article analyzes cluster approach and the sense of cluster phenomenon and proves inconsistency of application of only geographical approach to explanation of its nature; the author substantiates the market approach, which describes non-linear process (technology) of cluster institutionalization, when in the favorable market situation, macro-environment, and micro-environment around the main production of innovational and competitive products there appear a range of enterprises, which, for the purpose of optimization of transaction costs, form the effective chain of values, characterized by investment attractiveness and potential of development. Market approach, which describes the order of institutionalization of cluster, allows transitioning to the main stage of any economic research – to possibilities of formation of mathematical apparatus which describes cluster architecture and allows modeling its perspective development.

**Keywords:** cluster; cluster approach; value chains; transaction costs; technology; innovation; modeling; territory; institutionalization.

**JEL Classification:** M3; O3.

### Introduction

For modern economic studies, the phenomenon of clusters is by right one of the central ones, as practice shows that their presence in economy of country or region proves effectiveness of development of the whole economy of this country. Really, there is a range of clusters in the world economy which provide the regions where they are located with high indicators of gross regional product, which contributes into development of economy and the country which own the cluster.

Study of the phenomenon of clusters and cluster effectiveness makes economists come to the conclusion that if a certain cluster is formed in a region, it will provide the region with high indicators of development. In other words, the initial point is creation of cluster and the resulting point is that the region where cluster is located is a priori bringing high socio-economic dividends which are accumulated in the regional (and consequently in the national) budget. Such resulting results are quite possible, but they are based on what has been achieved during creation of corresponding clusters. At that, it is not taken into account that formation of such effective cluster was possible due to market success, forecasting of entrepreneur, his business talents, and, of course, favorable market situation. Such striving for formation of a cluster pays no attention to the whole technology of creation and development of the cluster, given the fact that not only the initial point but the very process of development of cluster and macro- and micro-environment of its development determine its effectiveness.

For the economic law, according to which not all business activities may lead to success, is still true. In other words, lack of attention to the process of emergence of a cluster may lead to negative results of feedback from investments into their development (if ever they have been attracted at the very beginning). Attention to the process is also important, as well as consideration of the fact that creation of cluster has subjective character and subjective

form of realization. Objective character determines the nature of cluster and the totality of necessary actions of entrepreneur for its development, not excluding the importance of consideration of market situation and certain market luck.

That's why in this work we focus on study and identification of nature of clusters, process of their establishment and development, considering them an economic phenomenon characterized by presence of criteria which determine which production structure (chain of values) becomes a cluster and which economic clusters require development of mathematical apparatus of explanation of technological process of their functioning in modern economy. This determines necessity for formulation of stages of this research. The first stage includes determination of economic sense of the notion "cluster", the second stage includes proving its technological nature which shows that cluster is a market phenomenon, and the third stage includes steps for formation of mathematical model.

## Conclusion

Thus, cluster acquires new features, the main of which are: consideration of horizontal and vertical connections which work in real economy, market orientation and market motivation to emergence of cluster, and presence of institutional environment and infrastructure. Such representation of cluster on the basis of mathematical model forms conditions for its effective functioning and creates possibilities for its management.

This leads to two directions of realization of cluster approach which we would divide depending on the subjects of management: micro-economic and macro-economic. Micro-economic direction supposes effective market management of cluster, in which productions are technologically connected and movable, depending on the quality of supplied resources. Organization of management of cluster in this case is close by its structure to methods of management of commodities flows in value chains.

Macro-economic aspect is realized in the concept of priority technological clustering of economy (Matkovskaya 2003). This work probably was in advance of its time, as the issue of the selection of top-priority technologies was declared in it before appearance of corresponding state projects. At that, modern challenges allowed us to supplement and develop ideas on clusters and cluster approach and continue their study in the following works.

Study of clusters and application of cluster approach has become a popular direction of research. It is quite logical, as cluster characterizes certain organizational and economic integrity and allows understanding the structure of sectorial and regional environment of the economy from many sides. At that, functioning cluster is an economically active form of management of transaction costs. This very sense should be put into the notion of cluster.

## References

- [1] Anchishkin, A. I. 1989. *Science-Technology-Economy. 2<sup>nd</sup> Edition*, Moscow: Economics, 383 pp.
  - [2] Blyakhman, L. S. 1991. *Economics, Management and planning of scientific and technical progress*. M.: Vysh. shk., 157 pp.
  - [3] Glazyev, S. Yu. 1990. *Economic Theory and Technical Development*. VlaDar, Moscow.
  - [4] Glazyev, S. Yu. 1993. *Theory of Long-Term Technical and Economic Development. International fund of N. D. Kondratyev*, VlaDar, Moscow.
  - [5] Matkovskaya Ya. S. 2014. Microeconomic reasons for rejection of innovations: An underestimated role of value chains for the new industrialization of the economy. *Economic Analysis: Theory and Practice*, 12: 10-17.
  - [6] Matkovskaya, Ya. S. 2004. *Technological structure of the economy and the problems of the Russian economy a priority clustering (monograph)*. INION Deposited manuscript. Deposited No. 58725. 108 pp.
  - [7] Matkovskaya, Ya. S. 2006. Clusters: a critique geographical approach. *Bulletin VolgGASU. Series Humanities*, 7 (19): 12-17
  - [8] Porter, M. E. 2001. *Competition. Trans. from English*. A Teaching Aid. Publishing House "Williams", 495 p.
  - [9] Shastitko, A. E. 2009. *Clusters as a form of spatial organization of economic activity: theory and empirical observations question*. Baltic region. No. 2. KiberLeninka Research Library. Available at: <http://cyberleninka.ru/article/n/klastery-kak-forma-prostranstvennoy-organizatsii-ekonomicheskoy-deyatelnosti-teoriya-voprosa-i-empiricheskie-nablyudeniya#ixzz2rFaJWJik> (accessed: 23.01.2014)
  - [10] Yakovets, J. V. 1984. *Laws of Scientific - Technical Progress and their Use in Planning*, Ekonomika, Moscow.
- \*\*\* World Bank citing: World Bank Group, CPIA database. Available at: <http://www.worldbank.org/ida> (accessed: 13.02.2016)
- \*\*\* World Statistics. Understand the world. Available at: <http://world-statistics.org/index-res.php?code=undefined?name=undefined> (accessed: 13.02.2016)

## Dependency Between Scenario Technique and Instruments for Enterprise Management

Snežana Todosijević LAZOVIĆ  
Faculty of Economics in Kosovska Mitrovica<sup>4</sup>, Serbia  
[snezana.todosijevic1@hotmail.com](mailto:snezana.todosijevic1@hotmail.com)

Zoran KATANIĆ  
University Singidunum Belgrade<sup>5</sup>, Serbia  
[zorankatanic@yahoo.com](mailto:zorankatanic@yahoo.com)

Radmilo TODOSIJEVIĆ  
Professor Emeritus  
Faculty of Economics in Subotica<sup>6</sup>, Serbia  
[todosijevicr@ef.uns.ac.rs](mailto:todosijevicr@ef.uns.ac.rs)

### Suggested Citation:

Lazović, S.T., Katanić, Z., Todosijević, R. 2017. Dependency between scenario technique and instruments for enterprise management *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 582 – 592.

### Abstract

Scenario technique presents decision makers with an unparalleled methodology to study the future before it occurs. Still, there is no single approach to the development and use of scenarios. Organizations have a great variety of options when choosing the type of the scenario, how it will be developed, explored, and related to decision-making. Scenario technique should also be a vital component and tool of business strategists. This technique produces a unique form of knowledge; it offers a productive laboratory where decision-makers can learn about the present and the future world; it can guide decision-makers to making strategic decisions in multiple ways. In a nutshell, scenario technique facilitates augmentation of managerial knowledge on how to prepare and lead the change, as well as on how to survive in future environments that may be totally different from the present. Scenarios should be an integral part of strategic thinking. They provide insight into what the future may bring and, at the same time, point to what is necessary to succeed in different futures and how to lay the foundation for success. Scenario is a technique used in anticipating various possible future developments, with regard to all factors relevant to a company. There are numerous approaches to developing scenarios. However, neither of these is ideal, or even sufficient, both for individual and complex situations. This is the reason why they are applied using different variables. Regardless of their purpose, scenarios help managers to test the possibility of their organization succeeding in the potential future setting, using the same business model or the same formula for success.

**Key words:** scenario technique; business; strategy; enterprise; controlling; management.

**JEL Classification:** O32

### Introduction

Instruments most frequently utilized in future-oriented enterprise management include: forecasting, controlling, strategic planning. Generally speaking, enterprise management should be oriented on plans, deviations and their causes, as well as functions and goals. Basically, it is the so-called cybernetic scheme of jurisdiction.

Controlling is a subsystem, or rather, a quantitative basis for a management system, which measures the predefined goals. Once a deviation is identified, its source is determined. This creates a management mechanism that becomes increasingly accurate in planning and plan execution. In terms of operations management, controlling refers to everyday, short-term decisions. Strategic planning sets goals and metrics that surpass the scope of

---

<sup>4</sup> Kolašinska 156

<sup>5</sup> Danijelova 32

<sup>6</sup> Segedin street 9-11

control. Strategic planning, among other things, aims to eliminate enterprise's weaknesses as soon as possible, as well as to develop its positive traits in the long term (Todosijević 1994).

Advances in science, new technologies, increasing complexity of work and life, demographic growth, increased uncertainty and risks, along with the strive to preserve and increase what had already been achieved, stimulated mankind to attempt to anticipate and master the facts of the future. The interest in studying the future has been present throughout the entire history of human development, and can be related to the understanding of man and the world in different historical stages of development. No matter how intensely people deliberated the future throughout the history, they were always burdened by values of their own eras. It can be concluded that differences in approaches are correlated with the settings in which intellectuals, philosophers, planners, and futurologists lived and worked in. Such deliberation of the future is related to certain values, and there is no way of thinking that can be labeled as a highly normative exercise.

Prognoses and analyses focused on the past promote information for all types of planning, but they can be seen as "subsequent" to planning, since we define activities aimed at dealing with the anticipated phenomena in a strategic manner as to limit the uncertainty that comes with the future. Along with planning, analysis and action comes incarnation, which represents devotion, joint commitment to obligations, projects, and common values in an endeavor to maximize the target function.

Anticipation, action and incarnation are parts of the same organism. Together they imply synergy, interconnection and dependence, and create a strategic culture, which represents a key variable in determining the success of guiding prognostic statements. Prognosis, analysis (control) and planning should result in formulation of key strategic concerns that will require efficient, effective and economical tactical operationalization.

Given the fact that development processes, due to overall development, are taking place at the velocity of acceleration (first derivative of the velocity vector), analysis, controlling and planning, along with prognostics, are expected to keep up with the trends in the environment, to initiate new routes for development, and enable control of activities and laws of nature, as a form of mankind's permanent acts in the world they live in and share their destiny with. Several dozens of new planning techniques and methods have emerged, as well as new controlling systems, analyses, behaviors, and organizations.

## Conclusion

In the present time, enterprise-level decision-making is based on knowledge management. Given that we live in times of great technical innovations, making decisions crucial to development of an enterprise strategy requires the ability to predict and sense future changes. Ex ante reactions are what is valued – to react before others, react before the fact and, accordingly, prevent potential surprises.

In accordance with the level of their importance, strategic decisions need to be repeatedly verified, animated, and simulated, possibly even redefined, as to reach the zone of satisfactory reliability in terms of events, outcomes and effects. Headquarters of modern armies, large corporations, governments operate in such way. Small and medium enterprises act similarly when deciding on investments, no matter what they are – construction, reconstruction, modernization, revitalization, investments in product development, technology, knowledge (Todosijević-Lazović 2010).

As opposed to short-term goals, forecasting and strategic planning produce ideas with greater reach, in the form of planned goals and programs that would mobilize the entire enterprise. Budgets are also made for longer periods, and enterprises want to utilize seemingly endless development possibilities. Uncertainties are reduced and potential risks are put under control. Planners gain better insight into events in the surroundings and can make better use of experience gained in the past. Marketing has an advantage when compared to production: the main goals are to increase production, reduce costs, and accomplish lower prices than the competition. This ensures a superior market share and greater profits. In long-term planning, future is predicted by means of extrapolation of past developments (Ansoff, Mc Donnell 1996). In well-managed companies, the results usually just above extrapolation, but are typically followed by the “saw effect”

When making a decision, it is of utmost importance to take into consideration key acting variables that affirmatively act towards the challenges of the strategic future, which, actually, is the aim of the decision.

Internal relations, position within the industry, lifecycles of the product and the dominant technology, relationship with the environment, the state and tendencies in the environment, in terms of stability and certainty trends impact the nature of the decision, the level of its reliability and duration. Timely reactions to all changes that occur in the environment, values, and resources will lead us to our goal. Information technology and other sources facilitate unobstructed information flows. As it can be seen here, formulation of an enterprise strategy is a complex endeavor. The decision maker must possess extraordinary skills. It is important that they have realistic insight into the cultural environment, as well as skills to timely react to technical innovations that lead to success.

## Summary

If we want a future without surprises, we must set out to meet it. Although the desired future is considered the best, a controlled future is the basis on which we wish to develop a range of future facts and the whole. With prognostics and strategic planning, horizons of the future are extended to a greater time. Series of moves, decisions, and events are an essential part of strategic thinking and scenario. The degree of certainty is inversely proportional to the time dimension. Quality of information and their processing will have a dominant profound effect on the quality of the decision. We can control the future only if we had drafted it, and made it adaptable to potential changes – not as surprises, but as intentional actions. With all instruments at disposal, and performers with adequate knowledge and qualities, guiding (management) becomes effortless. Existence of prognostics, controlling, business analysis, and strategic planning is conditioned by their ability to reproduce their assumptions and analytical outputs, through continuous adjustment and active feedback to the environment. On the other hand, the key role of controlling is to harmonize the information system with the system of planning, control and analysis. This requires establishment of business analysis and a system of feedback loops. A well-developed system for planning and analysis directly raises the efficiency of the control system.

## References

- [1] Ansoff, I., McDonnell, E. 1996. *Implating Strategic Management, second edition*, Prentice Hall, London. p.14
- [2] Ansoff, I. 1988. *The New Corporate Strategy*. New York, John Wiley and Sons.

- [3] Anthony, R. N. 1988. *The Management Control Function*, Boston: Harvard Business School Press.
- [4] Barakonyi, K. 1989. *Tablázatkezelő rendszerek*, Budapest, LSI.
- [5] Blazek, A., Deyhle, A., Eismayer, K. 2014. *Controlling System*, Belgrade, MCB. (translation)
- [6] Fleisher, S. C., Benosoussan, E. B. 2009. *Business and Competitive Analysis*, PEI, USA.
- [7] Fleisher, S. C., Benosoussan, E. B. 2003. *Strategy and Competitive Analysis: Methods and Techniques for Analyzing Business Competition*. Prentice Hall. ISBN: 0130888524, 9780130888525
- [8] Hermann, D. dipl. kfm. 1990. Schriftenreihe des Wirtschaftsförderungsinstituts "zukunftsplanung mit scenariotechnik", Wien.
- [9] Lumby, S. 1994. *Investment Appraisal and Financial Decisions*, 5<sup>th</sup> Edition London: Chapman & Hall.
- [10] Mazer, F. 1990. Controlling als Firungskonzept.
- [11] Malešević, Đ., Starčević, V. 2010. *Poslovna analiza*, Bijeljina, FPE.
- [12] Stiegler, H. et al. 2009. *Controlling, Volume I. Grundlagen und Planung*, Wirtschaftsförderungsinstitut der handelskammer, Wien.
- [13] Todosijević, R., Lazović, S. 2010. *Novi proizvodni programi, rast proizvodne sposobnosti i ekonomska efikasnost preduzeća*, doctoral thesis, University of Novi Sad, 232 -242 pp.
- [14] Todosijević, R. 2010. *Strategijski menadžment, Vol. II*. Faculty of Economics in Subotica, 115 p.
- [15] Todosijević, R. 2015. *Planiranje i analiza – determinante poslovnog odlučivanja*, 19th congress of accountants and auditors of Republic of Srpska, Banja Vrućica.
- [16] Todosijević, R. et al. 1994. *Menadžment*, Faculty of Economics in Subotica, 214-229 pp.



## The Effect of Short-Term Aggregate Demand in Indonesian Economy: The Era of ASEAN Economic Community

Bambang Bemby SOEBYAKTO  
Department of Economic Development  
Faculty of Economic, Universitas Sriwijaya, South Sumatra, Indonesia  
[bambangsoebyakto@gmail.com](mailto:bambangsoebyakto@gmail.com)

Abdul BASHIR  
Department of Economic Development  
Faculty of Economic, Universitas Sriwijaya, South Sumatra, Indonesia  
[abd.bashir@unsri.ac.id](mailto:abd.bashir@unsri.ac.id)

### Suggested Citation:

Soebyakto, B.B., Bashir, A. 2017. The effect of short-term aggregate demand in Indonesian economy: The era of ASEAN economic community. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 593 – 603.

### Abstract:

This research aims to see the interaction of the aggregate demand variables such as consumption, investment, government spending, exports and imports in influencing the economy in Indonesia that entered the era of the free market, generally refers to ASEAN Economic Community. The data used is secondary data obtained from the Central Statistics Agency in the period of 2000-2013. Quantitative approach is used as analysis method using simultaneous equation through the estimation of two-stage least square (TSLS). The results of the study show that consumption, investment, government spending, exports and imports affect the national income significantly. Proportionally, household consumption and investment still has the dominant proportion and greater influence on the national income compared to other macro variables. Meanwhile, the government expenditure is positively and significantly influences the investment in Indonesia. This indicates that the increase in exports can be affected by the amount of investment flow to in Indonesia and vice versa, while the increase in imports is influenced by the amount of national income, especially on the proportion of the level of household consumption.

**Keywords:** consumption; investment; government spending; exports; imports and national income

**JEL Classification:** E43; E44; E50.

### Introduction

Economic developments in Indonesia shows fluctuations, which are quite diverse, but in reality, a macroeconomic variable such as consumption plays an important role in Indonesia. The high public consumption is caused by the high population and the competition of the trading partner countries that are trying to export to Indonesia with potentially high demand due to the population as the fourth largest in the world, therefore, it also can be a trigger for a high demand in Indonesia. Economic development is the government's efforts to improve the standard of living of a nation. One indicator of economic development is the increasing sustainable economic growth. Economic growth is the development of production of goods and tax services which are realized in the form of an increase in national income. Many researches tries to develop macroeconomic models to look at the factors that influence national income or expenditure approach, which is often also known as the balance of open economy models.

An open economy is an economy that engages in international trade (exports and imports) in goods and services and capital with other countries. An open economy is a hot topic that is frequently discussed by economists of the world; this is one form of a macroeconomic model of development of a dynamic and unique. The relationship between economic openness (especially trade) and economic growth is the attractive proposition found in any textbook of international trade. There are several different theories that explain the adverse effects of trade openness on economic growth.

According to the conventional view, the high economic growth will trigger high inflation, but inflation is lower in countries that have a higher degree of openness because real depreciation caused by monetary expansion is

not anticipated, causing a bad influence such as increased costs of production with a growing degree of openness, thus the government will limit the rise in inflation and try to reduce the inflation rate (Romer 2006). The heavy reliance on import tariffs as a source of government revenue, and also a major aspect of the way of the process of trade openness in the economy, however, it is slowly beginning to decrease in the presence of free trade agreements among trading partner countries.

Mankiw (2007) argues that fluctuations or economic shocks may be caused by changes in aggregate demand “demand shock” as well as changes in aggregate supply “supply shock” rising import prices of intermediate goods e.g primary raw material prices. Implications of the rise in prices of imported goods on the economy, in general, can be understood through the mechanism of demand and supply. The mechanism of demand and supply can be translated through two transmission channels, among others: first, the rise in prices of imported goods will lead to a negative shock to the supply side “negative supply-side shock”. This means that the rise in prices say the price of capital goods will lead to increased costs for companies (business), which in turn will influence the company's decision to increase the number of production or for certain products even reduce the number of production companies; second, the rise in prices presented the fundamental shifts in terms of trade (terms of trade) from importing countries to exporting countries. As a result, real income and expenditure in the importing countries will be reduced.

Thus, the transmission of the rise in prices of imported goods through the two lines will cause a reduction in aggregate demand and aggregate supply and will give implication in decreasing of output and weakening economic growth. This will increase production costs and the price of domestic goods offered by manufacturers. The implication of the impact of the declining in aggregate demand is the reduction of output. In another word, a supply shock will result in stagflation in which the economy will experience stagnation (falling output) and inflation (rising prices). In the long run, there will be an adjustment of economic equilibrium.

In this study, the relationship between household consumption and investment impact on national income in the short term. In addition, this study tries to see the relationship between government spending on the development of investment into Indonesia. Furthermore, the study also looked at the relationship of export growth to investment and vice versa, and whether an increase in imports can be influenced by national income. The conclusion of Serrano and Summa (2012), Kiley (2014), Bania and Stone (2006) and Gupta *et al.* (2002), that fiscal adjustment achieved through cuts in spending, and tax increases on consumption, will prevent every country lost the status “investment grade” status with international investors and avoid increases in the external interest rate spread and possible external credit constraints, in accordance with the “rudimentary” fiscal dominance view described above. This will also supposedly improve the credibility of macroeconomic policy and simultaneously raise the state of confidence of internal investors and stimulate private investment, while reducing consumption, thus leading to an increase in domestic savings. The Model in this study can provide an example, but economic conditions and policies in each country that can be an underlying economic model in preparing that entered the ASEAN Economic Community (AEC) especially for Indonesia.

The next section presents the literature. The third section presents the research model specifications. The fourth section gives the estimation results for both models and explores the plausibility of features and present empirical estimates of the implications of the estimation results for the effects of a shift in the interaction of macroeconomic variables in the short-term economic activity, by comparison to other forecasts. The last section concludes.

## Conclusion

Based on the discussion of the results above, shows that in general, all macroeconomic variables have a significant effect on economic conditions in Indonesia. Furthermore, when viewed in the proportion of household consumption and investment still has a dominant proportion and greater influence national income than other macro variables. As for government spending is positive still affected by the large-small investment into Indonesia, it means that the increased in investment will increase government spending along with the construction and improvement of public goods.

The increase in exports in Indonesia is still influenced by the amount of investment in Indonesia and vice versa, while the increase in imports is driven by the size of national income, especially in the high proportion of the level of household consumption, this shows that the population in Indonesia cannot be separated of the consumption of imported goods. Therefore, the government must make a new breakthrough in terms of trade policy. Moreover, the current State of Indonesia is already faced with the free market era in this case the ASEAN Economic Community (AEC).

## References

- [1] Andres, J., Lopez-Salido, D., and Nelson, E. 2004. Tobin's Imperfect Asset Substitution in Optimizing General Equilibrium. *Journal of Money, Credit, and Banking*, 36(4): 665-690.
- [2] Arndt, W. H. 1998. *Development and Equitable Distribution in Indonesia*. Jakarta: LP3ES Publisher.
- [3] Bania, N., Gray, J. A., and Stone, J. A. 2006. Taxes, Government Expenditures, and State Economic Growth: The Role of Nonlinearities. *The Department of Planning. Working Paper Public Policy and Management*, University of Oregon. Available at: [https://www.researchgate.net/publication/5206679\\_Taxes\\_Government\\_Expenditures\\_and\\_State\\_Economic\\_Growth\\_The\\_Role\\_of\\_Nonlinearities](https://www.researchgate.net/publication/5206679_Taxes_Government_Expenditures_and_State_Economic_Growth_The_Role_of_Nonlinearities)
- [4] Chen, H., Curdia, V., and Ferrero, A. 2011. The Macroeconomic Effects of Large-Scale Asset Purchase Programs. *Staff Report No. 527*, Federal Reserve Bank of New York. Available at: [https://www.newyorkfed.org/medialibrary/media/research/staff\\_reports/sr527.pdf](https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr527.pdf)
- [5] Chung, H., Laforde, J. P., Reifschneider, D., and Williams, J. C. 2011. Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events? *Working Paper*, 2011-01, Federal Reserve Bank of San Francisco. Available at: <http://www.frbsf.org/economic-research/files/wp11-01bk.pdf>
- [6] Fuhrer, Jeffrey C., and Olivei, Giovanni, P. 2011. The Estimated Macroeconomic Effects of the Federal Reserve's Large-Scale Treasury Purchase Program. *Federal Reserve Bank of Boston Public Policy Briefs*, 11(2). Available at: [www.bostonfed.org/economic/ppb/2011/ppb112.pdf](http://www.bostonfed.org/economic/ppb/2011/ppb112.pdf)
- [7] Gagnon, J., Raskin, M., Remache, J., and Sack, B. 2011. Large-Scale Asset Purchases by the Federal Reserve: Did They Work? *Economic Policy Review* (Federal Reserve Bank of New York), 17(1): 41-59.
- [8] Gujarati, Damodar, and Dawn, C., Porter. 2009. *Basic Econometrics*. 5<sup>th</sup> Edition, Palgrave Macmillan. ISBN: 978-0-07-337577-9
- [9] Gupta, S., Clements, B., Baldacci, E., and Mulas-Granados, C. 2002. Expenditure Composition, Fiscal Adjustment, and Growth. *IMF Working Paper*, 02/77. Available at: <https://www.imf.org/external/pubs/ft/wp/2002/wp0277.pdf>
- [10] Hartati, E. S. 2012. Economic Impacts of Government Spending on Economic Growth, Employment Opportunities, and Poverty Levels. Ph.D. Diss. Bogor: Bogor Agriculture Institute.
- [11] Kiley, M. T. 2014. The Aggregate Demand Effects of Short- and Long-term Interest Rates. *International Journal of Central Banking*, 10(4): 69-104. Available at: <http://ideas.repec.org/a/ijc/ijcjou/y2014q4a3.html>

- [12] Lipsey, R.G, Courant, P. N., Purvis, D.D., and Steiner, P.O. 1995. *Macroeconomics*. 10<sup>th</sup> Edition. Jakarta: Aksara Binarupa Published.
- [13] Lee Jr, Robert, D., and Ronald, W., Johnson. 1998. *Public Budgeting Systems*. Sixth Edition. Gaithersburg, Maryland: Aspen Publishers, Inc. Chapter 5. pp. 110-127
- [14] Maryatmo, R. 2004. The impact of monetary policy of the Government Budget Deficit and the role of Rational In Model Simulation Macroeconomic in Indonesia (1983:1-2002:4). *Newsletters Monetary Economy and Banking*, 10(1): 22.
- [15] Mankiw, N. Gregory. 2007. *Macroeconomics*. New York: Worth Publisher. ISBN: 0-7167-6213-7
- [16] Pamuji, T. 2008. The Impact of the Budget Deficit of The Macroeconomy in Indonesia (1993-2007). Ph.D. Diss. Semarang: Diponegoro University.
- [17] Rao, M. G. 1998. Poverty Alleviation under Decentralization. *World Bank Institute*. Available at: [www.worldbank.org](http://www.worldbank.org)
- [18] Romer, D. 2006. *Advanced Macroeconomics*. Third Edition. Mc. Graw-Hill Irwin Publishing. ISBN 978-0-07-351137-5
- [19] Romer, C. D., and Romer, D. H. 2007. The Macroeconomic Effects of Tax Changes: Estimates Based On A New Measure of fiscal shocks. *Working Paper* 13264. National Bureau of Economic Research 1050 Massachusetts Avenue Cambridge, MA 02138. Available at: <http://www.nber.org/papers/w13264.pdf>
- [20] Serrano, F. and Summa, R. 2012. Macroeconomic Policy, Growth and Income Distribution in the Brazilian Economy in the 2000s. *Investigación Económica*, 71(282): 55-92. Available at: <https://ideas.repec.org/p/epo/papers/2011-13.html>
- [21] Turnovsky, S. J. 2004. The Transitional Dynamics of Fiscal Policy: Long-Run Capital Accumulation and Growth. *Journal of Money, Credit, and Banking*, 36(5): 883–910. Available at: <https://doi.org/10.1353/mcb.2004.0069>
- \*\*\* AEC 2015: Benefits and Challenges for Indonesia, Available at: [www.tax.thomsonreuters.com](http://www.tax.thomsonreuters.com) (accessed on November 9, 2015)
- \*\*\* UN. 2015: Transforming our world: the 2030 Agenda for Sustainable Development, United Nations Resolution A/RES/70/1 of 25 September 2015.

## Calculation of Localization Quotient for Employment in Cities of Slovakia – Prešov and Košice. Principles of Changes in Employment of the Productive People

Gabriela KOL'VEKOVÁ

Faculty of Economics, Department of Economic Theories  
Technical University of Košice  
[gabriela.kolvekova@tuke.sk](mailto:gabriela.kolvekova@tuke.sk)

Daniela PALAŠČÁKOVÁ

Faculty of Economics, Department of Economic Theories  
Technical University of Košice  
[daniela.palaskaova@tuke.sk](mailto:daniela.palaskaova@tuke.sk)

### Suggested Citation:

Kolveková, G., Palaščáková, D. 2017. Calculation of Localization Quotient for Employment in Cities of Slovakia – Prešov and Košice. Principles of Changes in Employment of the Productive People. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 604 – 614.

### Abstract:

Regional development is built upon success of both urban and rural areas. This paper observes both areas and emphasis the position of cities as urban areas. Applying method of location quotient allowed to shed a light on Global Value Chains – GVC, which cities participate in. Some cities were in a position to take advantage of participation in GVC. The impetus of this humble work was to look at position of Slovak cities (Prešov and Košice) in order to look for sectors that can help to develop the city and its adjacent regions. Examined cities are located in Eastern part of Slovak Republic.

This paper takes into account theories related to employment issues and data on employment. By comparison of two cities strengths and weakness of each of them were summarized. It is the first outcome of the paper. Second one, method of location quotient is simple, but provides clear evidence on the regional development or decline in particular industries and time of observation. Third result were scenarios, predictions emphasising the productive age of people regarding demographic changes.

**Keywords:** regional development; input-output analysis; location quotient

**JEL Classification:** J11, R23

### Introduction

Cities position in global world can either be embedded in the region or get disconnected from its own region. There exist particular sectors to urban economy, e.g. restaurants and hotels. Rapid changes were noticed for instance in London, Frankfurt already in 1980s and 1990s. The growth of these global cities is fed by location of transnational corporations, which does not have to apply to cities of smaller scale. Nonetheless, what applies is that “*cities are key sites for the production of services for firms*” (Sassen 2002). The overview of the dispersion in terms of various jobs in production in two Slovak cities by sectors was a motivation for writing this paper.

Paper is organized in two parts. Part one focuses on state of the art and consists of explanation of objectives and relevant theories, followed by a notes on methods applied. Part two is analysis itself and recommendations derived on results. Discussion provides reader with limitation of this paper as well as plausible or problematic parts of the research. Nonetheless conclusions are both general and particular for the cities observed. In this paper, the focus of research was to identify one possible way of measurement of the outputs and inputs in all industries in two regions of Slovakia: Prešov and Košice city. Method of location quotient was applied with dataset of employment in these two cities only in one year. The analysis emphasizes employment and productive age of the labor force together with prediction of labour forces dynamics till year 2025 in regions in question.

## Conclusion

The development of employment and unemployment in SR is a key question in short and long term perspective of development of economy. However, employment continues to rise according to the latest data available. It is so, because of the unfavourable development of the participation and decrease in unemployment after the economic crises. In line with macroeconomic projection the decrease of unemployment will not stop in the mid horizon and it is possible to expect the rise of employment.

In near future the projections showed that the rise of employment shall stop and in Slovak economy the supply side of the labour market becomes a limiting factor of higher economic growth. There might be a challenge to find the right employees proper for the job. This imbalance can lead to turndown of orders, which can cause slow-down of economy. Although the job exports propose some allowance of new hiring, importance will be the adaptation to new expectations in working environments. The challenge would still be how to increase the number of labour force either by including more of the long-term unemployed people, non-active (above the projections) or including the rise of net migration, or by the increase of the productivity in economy.

Demographic development in Slovakia and in countries of Europe will not be favourable in next few years. Demography projection till 2035 of United Nations counts in scenarios with zero migration and calculated decrease of population in productive age 20-64 years by almost 14% compared to year 2015, i.e. more than 40 million people.

European Commission assumes that the development of the labour market is lagging behind the GDP development approximately by half of the year, this means that the rejuvenation of economic activity should be subsequently reflected by stabile creation of job opportunities.

The ageing of population is a problem of EU and also the other European countries, in the Europe as a whole the population in productive age till 2035 should fall down by 15%, i.e. almost 67 millions of people, providing the fact that the migration is at its zero rate. Contrary the significant rise of the population eligible for pensions. The proportion of population in productive age in European countries (EU) should decrease from 60% to 53% by 2035. In next two decades the projects suggest that the increase of population in productive age in one EU country – Ireland. Apart from Ireland population in Europe should rise only in Albania and Island.

Urban sprawl might exist on the expense of rural depopulation. Concerning creative class or distinction of upper-middle class it can be argued and discussed as another option of measurement of city's development. The scenarios of job multipliers for both cities only agreed to results of Slovak economy being in downstream (both referring to the data of the same year 2014) of the GVC participation.

## Acknowledgement

This paper was written in connection with scientific project VEGA no. 1/0961/16. Financial support from this Ministry of Education's scheme is also gratefully acknowledged.

## References

- [1] Aboumasoudi, A. S., Mirzamohammadi, S., Makui, A., Tamosaitiene, J. (2016). Development of network-ranking model to create the best production line value chain: A case study in textile industry. *Economic Computation and Economic Cybernetics Studies and Research*, 50(1): 215-233.
- [2] Bednárík, R. a kol. (2014). *Národná stratégia zamestnanosti*. Bratislava: Inštitút pre výskum práce a rodiny.
- [3] Boschken, H. L. (2003). Global cities, systemic power, and upper-middle-class influence. *Urban Affairs Review*, 38(6): 808-830.
- [4] Brueckner, J. K. (2000). Urban sprawl: diagnosis and remedies. *International Regional Science Review*, 23(2): 160-171.
- [5] De Backer, K., Miroudot, S. (2014). Mapping global value chains.
- [6] Ciccone, A. 2002. Input Chains and Industrialization. *Review of Economic Studies*, 69: 565-587.



- [7] Dietzenbacher, E., Los, B. (1998). Structural decomposition techniques: Sense and sensitivity. *Economic Systems Research*, 10(4): 307-323. Retrieved from <http://search.proquest.com/docview/208375143?accountid=49346>
- [8] Farfan, O. (2005). Understanding and escaping commodity-dependency: a global value chain perspective. *documento preparado para la Corporación Financiera Internacional, Washington, DC, Banco Mundial.*
- [9] Flegg, A. T., Tohmo, T. (2013). Regional Input-Output Tables and the FLQ Formula: A Case Study of Finland. *Regional Studies*, 47(5): 703-721. DOI:10.1080/00343404.2011.592138
- [10] Florida, R. (2002). The rise of the creative class, and how it is transforming work, leisure, community and everyday life. *New York.*
- [11] Florida, R. (2014). *The Rise of the Creative Class--Revisited: Revised and Expanded*: Basic books.
- [12] Hujer, R., Thomsen, S. L. (2010). How do the employment effects of job creation schemes differ with respect to the foregoing unemployment duration? *Labour Economics*, 17(1): 38-51. DOI:10.1016/j.labeco.2009.07.001
- [13] Johnson, M. P. (2001). Environmental impacts of urban sprawl: a survey of the literature and proposed research agenda. *Environment and Planning A*, 33(4): 717-735.
- [14] Jun, M. J. (2009). Economic Impacts of Seoul's Job Decentralization: A Metropolitan Input-Output Analysis. *Journal of Regional Science*, 49(2): 311 - 327. DOI:10.1111/j.1467-9787.2008.00585.x
- [15] Los, B., Timmer, M. P., & de Vries, G. J. (2015). How important are exports for job growth in China? A demand side analysis. *Journal of Comparative Economics*, 43(1): 19-32. DOI:10.1016/j.jce.2014.11.007
- [16] López-Ruiz, V.-R., Alfaro-Navarro, J.-L., Nevado-Peña, D. (2014). Knowledge-city index construction: An intellectual capital perspective. *Expert Systems with Applications*, 41(12): 5560 - 5572. DOI: <http://dx.doi.org/10.1016/j.eswa.2014.02.007>
- [17] Marlet, G., Van Woerkens, C. (2007). The Dutch creative class and how it fosters urban employment growth. *Urban Studies*, 44(13): 2605-2626.
- [18] Miller, R. E., Blair, P. D. (1985). *Input-Output Analysis: Foundations and Extensions*: Prentice-Hall.
- [19] Romero, I., Tejada, P. (2011). A multi-level approach to the study of production chains in the tourism sector. *Tourism Management*, 32(2): 297-306. DOI:10.1016/j.tourman.2010.02.006
- [20] Sacco, P. L., Segre, G. (2009). Creativity, cultural investment and local development: a new theoretical framework for endogenous growth. In *Growth and Innovation of Competitive Regions* (pp. 281-294): Springer.
- [21] Sassen, S. (2002). Locating cities on global circuits. *Environment and urbanization*, 14(1), 13-30.
- [22] Suchacek, J., Sed'a, P., Friedrich, V. (2015). *Location Preferences of Largest Enterprises in the Czech Republic and Their Differentiation.*
- [23] Terluin, I. J. (2003). Differences in economic development in rural regions of advanced countries: an overview and critical analysis of theories. *Journal of Rural Studies*, 19(3): 327-344. DOI:10.1016/s0743-0167(02)00071-2
- [24] Wang, J. J., Cheng, M. C. (2010). From a hub port city to a global supply chain management center: a case study of Hong Kong. *Journal of Transport Geography*, 18(1): 104-115.
- [25] Swenson, D. (2006) The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II. Leopold Center for Sustainable Agriculture. Iowa State University Department of Economics.

## Evaluation, Forecasting and Management of the Investment Potential of the Territory

Irina Mikhailovna GOLAYDO  
Oryol State University of Economy and Trade, Oryol, Russian Federation  
[fdoogiet@mail.ru](mailto:fdoogiet@mail.ru)

Inna Grigorievna PARSHUTINA  
Oryol State University of Economy and Trade, Oryol, Russian Federation  
[ogiet@ogiet.ru](mailto:ogiet@ogiet.ru)

Galina Valerievna GUDIMENKO  
Oryol State University of Economy and Trade, Oryol, Russian Federation  
[galinagudimenko@yandex.ru](mailto:galinagudimenko@yandex.ru)

Alla Leonidovna LAZARENKO  
Oryol State University of Economy and Trade, Oryol, Russian Federation  
[allazarenko@rambler.ru](mailto:allazarenko@rambler.ru)

Natalia Vladimirovna SHELEPINA  
Oryol State University of Economy and Trade, Oryol, Russian Federation  
[shel-nv@yandex.ru](mailto:shel-nv@yandex.ru)

### Suggested Citation:

Golaydo, I.M., Parshutina, I.G., Gudimenko, G.V., Lazarenko, A.L., Shelepina, N.V. 2017. Evaluation, forecasting and management of the investment potential of the territory. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 615 – 632.

### Abstract:

The article is devoted to theoretical, methodological and practical solving of the problem of assessment of investment environment at regional level. In the study, the authors used analytical and statistical methods, the method of system and factor analysis, expert evaluation and correlation. The authors analyzed and structured the main provisions of significant studies regarding the evaluation of the investment potential of the region, clarified the definition of the basic concepts used in the territorial investment analysis, described the investment climate of the territory using the investment potential evaluates, and analyzed the investment activity in the region. The paper summarizes the results of the analysis conducted by the authors of the regional and budget efficiency of investments, and presents the key provisions of the author's technique of assessing and forecasting the investment potential of the territory. Taking into account the results obtained by the authors, the strengths and weaknesses of the study region were highlighted, reserves for improving the investment climate were found, and a model of investment management at territorial level was developed.

**Keywords:** investment potential of the region; investment activity.

**JEL Classification:** R11 ; R13 ; R53 ; R58.

### Introduction

Investment plays an important role in maintaining and enhancing the economic potential of any state and its constituent entities. In all major countries, some of the investment process regulation functions are transferred to the regional level of government, making it possible to take into account the investment market specifics. It is known that the increase in investments in the region to achieve the main goal of regional development - the improvement of quality of life of the population - is provided, among other things, by the enhancement of its investment attractiveness and shifting to innovative development.

Today's insufficient investment attractiveness of a significant part of Russian regions, compared to many other countries, is the main cause of a considerable shortage of both foreign and domestic investments. Investment



attractiveness of a territory is determined by the degree of favorable investment climate in it, as well as investment potential and investment risk. Thus, increasing the investment attractiveness and stimulation of investment activity are the main tasks for any region. Along with the problems of the development of incentive measures and enhancing the attractiveness of the territory, the issue of “readiness” of the local economic systems to accept investments is challenging. Thus, the evaluation of elasticity of the regional economic system to the impact of external factors, including investments, is an urgent problem. This can be evaluated by means of indicator of investment susceptibility of the regional economy.

## Conclusion

It should be noted that the above method of the region's investment potential evaluation not only takes into account the interests of potential investors and the characteristics of each region, but also makes it possible to evaluate the potential of each region, without defining its place among others.

We believe this is particularly important in a situation where the investor chooses the area for investment having no sufficient information to perform the comparative evaluation of the investment potential of all the regions, and the ranking score has been attributed by rating agency without regard to his individual preferences and priorities. The proposed investment potential evaluation methodology can solve these problems and evaluate the investment potential of the region on the basis of available statistical data on the dynamics of the main socio-economic parameters.

Thus, we can conclude that the above method of the region's investment potential evaluation not only takes into account the interests of potential investors and the characteristics of each region, but also makes it possible to evaluate the potential of each region, without defining its place among others.

## Acknowledgments

The study was funded by federal grants of the Ministry of Education and Science of the Russian Federation. The research results were obtained within the framework of the state order of the Ministry of Education and Science of the Russian Federation.

## References

- [1] Åslund, A. 2012. How entrepreneurship could be promoted after the collapse of a socialist economic system. *Journal of Asian Economics*, 23(2): 157-167. Available at: <http://dx.doi.org/10.1016/j.asieco.2011.09.003>
- [2] Babkin, A., Kudryavtseva, T., and Utkina S. 2013. Formation of Industrial Clusters Using Method of Virtual Enterprises. *Procedia Economics and Finance*, 5: 68-72. Available at: [http://dx.doi.org/10.1016/S2212-5671\(13\)00011-7](http://dx.doi.org/10.1016/S2212-5671(13)00011-7)
- [3] Batabyal, A. A. 2012. Project financing, entrepreneurial activity and investment in the presence of asymmetric information. *The North American Journal of Economics and Finance*, 23(1): 115-122. Available at: <http://dx.doi.org/10.1016/j.najef.2011.11.006>
- [4] Breinlich, H., Ottaviano, G., and Temple, J. 2014. Regional Growth and Regional Decline. *Handbook of Economic Growth*, 2: 683-779. Available at: <http://dx.doi.org/10.1016/B978-0-444-53540-5.00004-5>
- [5] Bulgakova, L. N. 2012. *Methodological aspects of estimation of socio-economic potential of region*. Available at: <http://www.uecs.ru/uecs-37-372012/item/1004-2012-02-01-05-52-52>
- [6] Castells, A., and Solé-Ollé, A. 2005. The regional allocation of infrastructure investment: the role of equity, efficiency and political factors. *European Economic Review*, 49(5): 1165-1205. Available at: <http://dx.doi.org/10.1016/j.euroecorev.2003.07.002>
- [7] Doroshenko, Y. A., and Baidina, O. V. 2008. *Russian power depends on regions: Investment ensuring reproductive stability of the region*. Available at: <http://www.creativeconomy.ru/articles/5116/>
- [8] Folomyev, A., and Revazov, V. 1999. The investment climate in the regions of Russia and ways of its improvement. *Economic Issues*, 9: 10-15.
- [9] Golaydo, I. M. 2008. Investment Potential of the Region. *The Regional Economy*, 17(74): 59-68.
- [10] Golaydo, I. M. 2009. Economic Integration and Investment Opportunities of the Region. *The Regional Economy*, 7 (100): 30-42.

- [11] Golaydo I. M. and Soboleva Y. P. 2015. Assessment and management of factors of the regional investment potential. *Asian Social Science*, 11(7). Available at: <http://dx.doi.org/10.5539/ass.v11n7p240> (accessed: 10/01/2016)
- [12] Golaydo, I. M., and Lazarenko A. L. 2016. Current problems of economy and finance. Collection of abstracts of scientific works of 6<sup>th</sup> International Scientific Conference, Kyiv-St. Petersburg-Vienna, June 30. 2016. *Financial & Economic Research Council*: 66. Available at: <http://doi.org/10.21267/IN.2016.9.3290>
- [13] Khachaturov, T. S. 1973. Improvement of methods for determining the effectiveness of capital investments. *Economic Issues*, 3. 82-87.
- [14] Kihlgren, A. 2003. Small business in Russia – factors that slowed its development: An analysis. *Communist and Post-Communist Studies*, 36(2): 193-207. Available at: [http://dx.doi.org/10.1016/S0967-067X\(03\)00025-4](http://dx.doi.org/10.1016/S0967-067X(03)00025-4)
- [15] Lavrov, S. B., and Sdasyuk, G. V. 1984. The evolution of regional development concepts: Some new trends. *Geoforum*, 15(1): 11-17. Available at: [http://dx.doi.org/10.1016/0016-7185\(84\)90005-8](http://dx.doi.org/10.1016/0016-7185(84)90005-8)
- [16] Lazarenko A., Golaydo, I., and Rykova, I. 2015. Integration in the region and their impact on investment flows. *Fundamental Research*. 3: 120-126. Moscow: Russian Academy of Natural History.
- [17] Miroyedov, A. A., and Sharamigina, O. A. 2013. The use of gross regional product in assessing the economic development of the region. *Voprosy Statistiki*, 9: 29-36.
- [18] Platon, V., Constantinescu, A. 2014. Monte Carlo Method in Risk Analysis for Investment Projects. *Procedia Economics and Finance*, 15: 393-400. Available at: [http://dx.doi.org/10.1016/S2212-5671\(14\)00463-8](http://dx.doi.org/10.1016/S2212-5671(14)00463-8)
- [19] Podshivalenko, G. P., and Kiselyova, N. V. 2005. *Investment Business*: 432. Moscow: Knorus
- [20] Richardson, H. W., and Townpoe, P. M. 1987. Regional policies in developing countries, In P. Nijkamp (Ed.), *Handbook of Regional and Urban Economics*. 16 (1): 647-678. Available at: [http://dx.doi.org/10.1016/S1574-0080\(00\)80019-X](http://dx.doi.org/10.1016/S1574-0080(00)80019-X)
- [21] Rolik, Y. A. 2013. A Complex Approach to Evaluating the Innovation Strategy of a Company to Determine its Investment Attractiveness. *Procedia - Social and Behavioral Sciences*, 99: 562-571. Available at: <http://dx.doi.org/10.1016/j.sbspro.2013.10.526>
- [22] Sabirova, M., Fazlyeva, E. and Feifer-Shishkina, R. 2014. Impact of Monopsonical Labor Market on the Development of Regions of Russian Federation. *Procedia - Economics and Finance*, 15: 363-370. Available at: [http://dx.doi.org/10.1016/S2212-5671\(14\)00449-3](http://dx.doi.org/10.1016/S2212-5671(14)00449-3)
- [23] Safiullina, A., Fatkhiev, A., and Ulesov, D. 2014. The Main Categories of Innovative Economy. *Procedia Economics and Finance*, 15: 459-465. Available at: [http://dx.doi.org/10.1016/S2212-5671\(14\)00482-1](http://dx.doi.org/10.1016/S2212-5671(14)00482-1)
- [24] Săvoiu, G., and Țaicu, M. 2014. Foreign Direct Investment Models, based on Country Risk for Some Post-Socialist Central and Eastern European Economies. *Procedia - Economics and Finance*, 10: 249-260. Available at: [http://dx.doi.org/10.1016/S2212-5671\(14\)00300-1](http://dx.doi.org/10.1016/S2212-5671(14)00300-1)
- [25] Shmelev, S. E. 2011. Dynamic sustainability assessment: The case of Russia in the period of transition (1985-2008). *Ecological Economics*, 70(1): 2039-2049. Available at: <http://dx.doi.org/10.1016/j.ecolecon.2011.06.003>
- [26] Sivelkin, V. A., and Poltavchenko, G. S. 2002. The investment component of the CFO regions. *Foreign Trade*, 4: 3-5.
- [27] Soboleva, Y. P., and Golaydo, I. M. 2014. Innovative and Investment Activity of the Region. *The Orelgiet Bulletin*, 3: 18-25.
- [28] Soboleva, Y. P., and Golaydo, I. M. 2014. Social and Economic Development of the Region (as exemplified in the Oryol region). *The Scientific Notes of Orelgiet*, 1: 118-123

- [29] Soboleva Y. P., Golaydo I. M., Ligina N. I. 2015. Strategy of expanding the distribution network based on the evaluation of the investment attractiveness of the regions. *Modern Applied Science*, 5 (9): 304-313. DOI: 10.5539/mas.v9n5p304
- [30] Soboleva Y. P., and Parshutina, I. G. 2015. Marketing approach to forecasting of regional market consumption potential. *Indian Journal of Science and Technology*, Dec., 8(S10). DOI: 10.17485/ijst/2015/v8iS10/84871
- [31] Soboleva Y. P., and Parshutina, I. G. 2016. Management of investment attractiveness of the region by improving company strategic planning. *Indian Journal of Science and Technology*, 14 (9). DOI: 10.17485/ijst/2016/v9i14/91522
- [32] Valinurova, L. S., and Kazakova, O. B. 2013. *Evaluation of investment attractiveness of the regions of the Volga Federal District: the factors and conditions for attracting investment*. Regional Economy and Management. Electronic scientific journal, 4(36). Available at: [Http://region.mcnip.ru](http://region.mcnip.ru)
- \*\*\* Expert RA Rating Agency. 2014. *Russian Federation, Moscow*. Available at: <http://raexpert.org/ratings/>

## Complex Methodical Approach to Assessing the Effectiveness of Managing the Financial Capability of the Russian Federation Subjects

Anastasia Grigorevna VASILIEVA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[agvasileva@inbox.ru](mailto:agvasileva@inbox.ru)

Vasilya Minsalikhovna GAFUROVA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[gvm\\_65@mail.ru](mailto:gvm_65@mail.ru)

Inessa Valeryevna KASHUBA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[ikashiba@mail.ru](mailto:ikashiba@mail.ru)

Yuliya Leonidovna KIVA-KHAMZINA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[kiva\\_hamzina@mail.ru](mailto:kiva_hamzina@mail.ru)

Olga Leonidovna NAZAROVA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[oll.nazarova@mail.ru](mailto:oll.nazarova@mail.ru)

Larisa Vladimirovna ORININA  
Nosov Magnitogorsk State Technical University, Magnitogorsk, Russia  
[orinina\\_larisa@mail.ru](mailto:orinina_larisa@mail.ru)

### Suggested Citation:

Vasilieva A.G., Gafurova V.M., Kashuba I.V., Kiva-Khamzina Y.L., Nazarova O.L., Orinina L.V. 2017. Complex methodical approach to assessing the effectiveness of managing the financial capability of the Russian Federation subjects. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 633 – 642.

### Abstract:

In the current context, when the economic reality has become very diverse, volatile and less favorable, the problem of effective management of financial capability of the Russian Federation subjects is of particular importance. The authors employed a systematized method for economic and statistical evaluation of the influence of the financial resource availability level of the Russian Federation subjects as a factor of the socio-economic well-being of today's territories. The article presents the results of development and theoretical underpinning of a fundamentally new complex methodological approach to assessing the effectiveness of managing the financial capability of the regions by comparing the criteria of 'integrated index of financial capability' and 'growth rates of the socio-economic well-being indicators' proposed by the authors; its systematic mathematical algorithm is presented. The authors have researched the feasibility of practical application of the proposed criteria and the presented mathematical algorithm in assessing the management of the financial capability of the Russian Federation subjects constituting the Urals Federal District. The article is elaborating upon the area of comprehensive assessment of managing the regions' financial capability, which remains under-characterized in the national financial science, and provides an opportunity to modernize the existing approaches to the assessment.

**Keywords:** correlation dependence; socio-economic well-being; socio-economic growth; financial capability management

**JEL Classification:** C13; E60; H50; H60

### Introduction

The high effectiveness of managing the financial stability of some regions' development while some other territorial units are in the non-equilibrium state causes problems of the erratic socio-economic well-being process in the country as a whole, and may cause a series of macroeconomic cyclical fluctuations. In this context, it is crucial

more than ever to expose the effectiveness of managing the financial capability of the Russian Federation subjects to the economic and statistical analysis, which allows comparing the level of financial capability and the capacity of the modern territory of getting the maximum return out of its economic space.

The economic situation at present prevailing in the Russian Federation shows a tough asymmetry in the regional evolution from the standpoint of financial capability. The tools for horizontal and vertical alignment of the socio-economic development level of the modern communities applied by the government are focused primarily on providing macro governability of the regional system, which in some degree has led to the dependence on upper-level governments, exacerbation of social injustice, the reduced interest of the authorities of the Russian Federation subject in enhancing financial stability. Note that 'many fiscally decentralized economies rely heavily on transfers from upper to lower-level governments as well as on equalizing transfers between lower-level governments' (Lundqvist 2015). As a consequence, '...according to the World Economic Forum, Russia ranks 127 in the world on the development level of the financial sector' (Rakhlis *et al.* 2014).

## Conclusions

Thus, as a result of the research carried out by the authors:

- a methodological approach to assessing the effectiveness of managing the financial capability of the Russian Federation subjects has been proposed, holistically taking into account the integrated index of financial capability and the indicators of socio-economic well-being, which together form the territorial potential for sustainable development;
- it has been established that the proposed tools for assessing the effectiveness of managing the financial capability of the Russian Federation subjects would allow for regular monitoring of the actual performance indicators of the territorial fiscal policy compliance with the optimum values, for increasing the interest of the regional authorities in reducing the resource dependence on the upper-level governments;
- the discouraging nature of the currently existing mechanisms of forming the financial capacity of the Russian Federation subjects has been revealed, which do not only hinder the process of augmenting the socio-economic welfare of the territories, but also have a detrimental effect on the business activity, often putting economic entities at the brink of survival.

## References

- [1] Balynskaya, N. R. 2013. Subjects information and political governance in Russia at the present stage. *Economics and Politics*, 1(1): 144-146.
- [2] Dymski, G. A. 2009. Financing Community Development in the US: A Comparison of 'War on Poverty' and 1990s-Era Policy Approaches. *Rev Black Polit Econ.*, 36: 245–273. DOI: 10.1007/s12114-009-9050-6
- [3] Kharitonova, N. A., Kharitonova, E. N., and Levinson, N. L. 2007. Simulation of Social Costs and Corresponding Sources of Financing in City (Regional) Budgets. *Steel in Translation*, 3: 248–251. DOI: 10.3103/S0967091207030187
- [4] Kizeev, A. V. 2011. Financial potential as a criterion for assessing the financial independence of the region. *Economic Research*, 5, 4. Available at: <http://www.erce.ru/internet-magazine/magazine/24/366/>. (accessed: 30/09/2016)
- [5] Liberati, P., and Sacchi, A. 2013. Tax decentralization and local government size. *Public Choice*, 157: 183–205. DOI: 10.1007/s11127-012-9937-9
- [6] Lundqvist, H. 2015. Granting public or private consumption? Effects of grants on local public spending and income taxes. *Int Tax Public Finance*, 22: 41–72. DOI: 10.1007/s10797-013-9279-7
- [7] Rakhlis, T. P., Skvortsova, N. V., Koptyakova, S. V. 2014. The first experience of Russia in the WTO: The banking sector. *Life Science Journal*, 9: 385-388. Available at: [http://www.lifesciencesite.com/lj/life1109/060\\_25340life\\_110914\\_385\\_388.pdf](http://www.lifesciencesite.com/lj/life1109/060_25340life_110914_385_388.pdf)
- [8] Shubat, O., Bagirova, A., Abilova, M., and Ivlev, A. 2016. *The Use of Cluster Analysis for Demographic Policy Development: Evidence from Russia*. Paper presented at the 30<sup>th</sup> European Conference on Modelling and Simulation. May 31-June 03, Regensburg, Germany. 159-165. DOI: 10.7148/2016-0159
- [9] Tarasova, N. A., Vasil'eva, I. A., and Sushko, E. D. 2009. Analysis of the Social Policy Parameters by Forecasting Indicators of Social Sector Financing. *Studies on Russian Economic Development*, 5: 495–505. DOI: 10.1134/S1075700709050049
- [10] Vasil'eva, A. G. 2011. Evaluation of fiscal regulation performance of innovation development of economy. *The Economic Analysis: Theory and Practice*, 15: 36-42. Available at: <http://cyberleninka.ru/article/n/otsenka-rezultativnosti-nalogovogo-regulirovaniya-innovatsionnogo-razvitiya-natsionalnoy-ekonomiki>.
- [11] Verbinenko, E. A., Badylevich, R. V. 2013. Methodological approaches to the content and assessment of financial capacity of a region. *Bulletin of ENGECON*, 2(61): 60-67. Available at: <http://elibrary.ru/item.asp?id=21003372>.
- [12] Zambrzhitskaia, E. S., Ivanova, N. Ye., Ivanov, V. G., Kobeleva, I. V., and Balbarin, Ya. D. 2016. Distribution of Indirect Costs on the Basis of the Matrix Approach (as Exemplified by CHP Plant of Cogenerated Type). *Indian Journal of Science and Technology*, 9(14). DOI: [10.17485/ijst/2016/v9i14/91081](https://doi.org/10.17485/ijst/2016/v9i14/91081)
- [13] Zenchenko, S. V. 2009. *Formation and assessment of regional financial potential of sustainable development areas of the economy: the theory and methodology*: Abstract of PhD diss. in Economics. North Caucasus State Technical University: Stavropol.

## Pro-active Work Behavior, Professional Commitment and Psychological Well Being. A mediation of Organizational Culture

Divya SHUKLA  
St. Theresa International College<sup>7</sup>, Thailand  
[divyashukla13@gmail.com](mailto:divyashukla13@gmail.com)

### Suggested Citation:

Shukla, D. 2017. Pro-active work behavior, professional commitment and psychological well being. A mediation of organizational culture. *Journal of Applied Economic Sciences*, Volume XII, Spring, 2(48): 643 – 652.

### Abstract:

Consistent changes over a period of time have made the tremendous impact on adopted and aspired behavior at work place. Despite of several studies on behavior at work the literature of pro active work behavior has not been investigated in several conceptual settings. The current research is attempting to test the mediation of the organizational culture on the relationship of proactive work behavior, professional commitment and Psychological well being. The study has taken quantitative approach with incorporating survey method on 535 employees who are working in service sector in Bangkok City, Thailand. The mediation has been tested through structural equation modeling and supported with the good indicators of Model Fit. The finding supports the mediation effects of organizational culture on employees' proactive work behavior, their professional commitment and perceived level psychological well being. The study has further given managerial implication in the individual, group and organizational level. Apart from this the study is also contributing to the literature of Proactive work behavior with multi level perspectives where individual, team and organizational level have been taken into consideration. With examining the mediation effects the study would also attempt to bridge the conceptual gap in body of literature with exploring them in the perspective of pro active work behavior such as professional commitment and psychological well being.

**Keywords:** pro active work behavior; professional commitment; psychological well being; organizational culture

**JEL Classification:** D23, M54, L00, L20, L29.

### Introduction

Consistent changes over a period of time have made the tremendous impact on adopted and aspired behavior at work place. Delegation of the work with decentralization, flexible working scenario, persistent application and chasing innovation, shift from organizational change approach to transformation are focusing the need of an employee who demonstrate initiative, problem solving with creative work approach. (Arefin, Arif and Rakeeb 2015, Montani, Odardi and Baabstelli 2014, Schemitt, Harlog and Betschak 2016).

Proactive work behavior has been conceptualized with individual attention towards the future course of action where initiative, innovation and taking charge plays important role. Parker and Strauss, 2010 said that being proactive at work is about making things happen, anticipating and preventing problems and setting opportunities. It involves self-directed work initiation to bring about changes in work environment and oneself to achieve different future. Pro-activity is important for the career success (Seibert, Crant and Kraimer 1999). Proactive personality gives effective contribution and commitment to their respective career (Vandenberghe and Basak 2013). Professional commitment refers as strong feelings of one's loyalty towards the profession to which individual work for. The professional commitment of employees often tends to let them demonstrate the organizational commitment (Baugh and Robert, 1994). This refers to the individual involvement in one's profession (Yang, Lai, Huang, Hsieh, Lia and Chao 2011). Where individual believes in goals and values of the career are inclined to show significant effort in professional activities and proud to be into their career they feel their identity with the opted career. In line with the philosophy the current research is focusing on the examining the conceptual relationship between professional commitment and proactive work behavior.

However, organizational context plays important role in making the proactive work behavior (Ruepert *et al.* 2016) and Organizational subculture was more strongly related to career commitment (Lok and Crawford 1999). The organizational research on Proactive work behavior of individual employees in organization has blossomed (Grant and Ash 2008) though there is dearth of studies where mediation role of organizational culture has been investigated in respect to the proactive work behavior. The effects of proactive behavior on employee emotional well being is also need to conceptualize as this may renders

---

<sup>7</sup> 1 Moo 6 Rangsit Nakhon Nayok Road Klong 14 Bungsan Ongkharak Nakhon Nayok Thailand-26120



impact as the adverse or favorable consequence of demonstrating proactively behaving at work (Wu, Subramanian, Cynthia and Sharan 2016). Hence the current paper is attempting to overarching the conceptualization and extending the literature of pro active behavior in the many ways.

First, this is attempting to investigate the relationship between proactive work behavior and individual professional commitment which renders to answer the questions such as how the level of professional commitment affects the proactive work behavior.

Second, this would attempt to see whether there is direct relationship between proactive behavior and Psychological well being of the employee. This reflects to answer the question that whether voice, taking charge, feedback seeking and innovation at work give psychological impact to their emotional well being.

Third and most importantly the current research has attempted to investigate the mediation effects of organizational culture on the proposed relationship. As the organizational culture component such as family orientation, open communication, team work and knowledge of manager may influence the relationship of Professional commitment, proactive work behavior and employee well being.

To summarize the study is contributing to the literature or Proactive work behavior with multi level perspectives where individual, team and organizational level have been taken into consideration. With examining the mediation effects the study would also attempt to bridge the conceptual gap for body of literature with exploring them in the perspective of pro active work behavior such as professional commitment and psychological well being.

## Discussion and Conclusion

The study has aimed to investigate the mediation effects of organizational culture on the pro active work behavior, employees' professional commitment and their psychological well being. The 535 employees of different service sector have been participated in the survey. The gathered data has further been explored to test the hypothesized relationship. The statistical inferences obtained after the analysis of data through structural equation modeling has well supported the theoretical model and it has been found that organizational culture does affects the propensity of employees' pro active work behavior, their professional commitment and psychological well being. As the investigated conceptual phenomenon is novel in nature the result could not represent with the clear literature support but the culture has given moderation effects of the organizational commitment (Yiing, Ahmed and Bin 2009). The co relational statistics has supported the presumptions that the professional commitment of the employees are significantly correlated with the pro active work behavior as the concept has not been studied earlier there is no evidence in the literature to show consistency in the finding however Shore and Wyne (1993) has investigated the level of commitment with organizational citizenship behavior and found them significantly correlated as the citizenship behavior has the little influence of the pro active work behavior, hence may be said that these gives partial support to the findings. The similar observation for the conceptual relationship of organizational culture and professional commitment has been reported and they have also been found significantly correlated.

The conceptual investigation between proactive work behavior and employees Psychological well being has also reported with the supporting statistical inferences and made them significantly correlated which is consistent with the findings of Sharifad (2013) who have tested the phenomenon with moderation of transformational leadership and found these two variable significantly correlated in his empirical investigation.

The study has conceptual investigation in empirical settings and profoundly contributes in the several body of the literature such as organizational culture, behavior at work, professional commitment and employee well being. As the study concluded that Organizational culture may influence the employee in professional setting to execute his pro activity which may leads to his further consequences of negative or positive emotional well being status. This also propagates the importance of organizational cultural dimensions such as open communication, consensual decision making, the team approach and knowledge of managers in shaping the employee behavioral consequences with respect to his commitment and proactive approach at work. As the study has been performed with the service sector professional this reflects more importance on its managerial and organizational implications.

### Limitation and future scope of the study

Despite of several precautions the current study has observed the limitations in respect to approachability to the respondents as the being into the service sector they need to be attentive at work and has less prominent chance to participate in the survey willingly. As the survey has taken the response of service sector its applicability on manufacturing may differ. The study has taken one city as the sample area where as this may take longitudinal approach and may also observed on the larger sample size to present more accuracy in the finding.

To let this phenomenon be studied in manufacturing industry may add the other dimension or perspective as future scope of research. The study has taken the conceptual investigation on interaction between set of variables where respondents demographic variable and other pertaining conceptual variable such as their tenure with the employment, level of job performance etc has not been taken as part of analysis or discussion. Apart from this the current conceptual model may also be reframed with including the leadership and organizational innovative work culture as employees would tend to be proactive if the organization has regular practice of innovation at work. The employee pro active work behavior may also further be investigated with organizational learning propensity.

### Implications for organizational development

The current research is facilitating implications in individual, organizational and group level. As per the findings with the observed variables this reflect that individuals' proactive work behavior has influence with their professional commitment, hence those who are having cognitive professional commitment would lead to demonstrate the pro active work behavior. Hence this has reflected several human resource management implications such as at time of recruitment this may be taken into consideration that how individuals has demonstrated his cognitive commitment towards their profession with suitable screening of the candidature. This also give implication in group setting behavior as the more proactive work behavior is relating to positive or negative well being hence managers or leaders are in need to understand its effective handling at work as this may give adverse effects as well. At the organizational level this gives implications that organizations are recommended to have more open communication, participative decision making and effective support of manager to nurture the pro active work behavior.

## References

- [1] Belschak, F., den Hartog, D. 2010. Being proactive at work - blessing or bane? *Psychologist*, 23(11): 886– 889.
- [2] Belschak, F. D., den Hartog, D. 2010. Pro-self, prosocial, and pro-organizational foci of proactive behavior. Differential antecedents and consequences. *Journal of Occupational and Organizational Psychology*, 83: 475–498. DOI:10.1348/096317909x439208
- [3] Claes, R., van Loo, K. 2011. Relationships of proactive behavior with job-related affective well-being and anticipated retirement age: An exploration among older employees in Belgium. *European Journal of Ageing*, 8(4), 233–241. DOI:10.1007/s10433-011-0203-7
- [4] Cooper-Thomas, H. D., Paterson, N. L., Stadler, M. J., Saks, A. M. 2014. The relative importance of proactive behaviors and outcomes for predicting newcomer learning, well-being, and work engagement. *Journal of Vocational Behavior*, 84(3): 318–331. DOI:10.1016/j.jvb.2014.02.007
- [5] Denison, D. R., Spreitzer, G. M. 1991. Organizational culture and organizational development: A competing values approach. *Research in Organizational Change and Development*. Retrieved from [http://www.denisonconsulting.com/sites/default/files/documents/resources/denison-1991-competing-values-approach\\_0.pdf](http://www.denisonconsulting.com/sites/default/files/documents/resources/denison-1991-competing-values-approach_0.pdf)
- [6] Giffords, E. D. (2009). An examination of organizational commitment and professional commitment and the relationship to work environment, demographic and organizational factors. *Journal of Social Work*, 9(4): 386–404. DOI:10.1177/1468017309346232
- [7] Lok, P., Crawford, J. 1999. The relationship between commitment and organizational culture, subculture, leadership style and job satisfaction in organizational change and development. *Leadership & Organization Development Journal*, 20(7): 365–374. DOI:10.1108/01437739910302524
- [8] Lachman, R., Aranya, N. (1986). Job attitudes and turnover intentions among professionals in different work settings. *Organizational Studies*, 7: 279-293.
- [9] Lapiņa, I., Kairiša, I., Aramina, D. (2015). Role of organizational culture in the quality management of university. *Procedia - Social and Behavioral Sciences*, 213: 770–774. doi:10.1016/j.sbspro.2015.11.472
- [10] Li, M., Wang, Z., Gao, J., You, X. 2015. Proactive personality and job satisfaction: The mediating effects of self-efficacy and work engagement in teachers. *Current Psychology*. DOI:10.1007/s12144-015-9383-1
- [11] Parker, S. K., Williams, H. M., & Turner, N. 2006. Modeling the antecedents of proactive behavior at work. *The Journal of Applied Psychology*, 91(3): 636–52. DOI:10.1037/0021-9010.91.3.636
- [12] Parker, S. K., Collins, C. G. 2010. Taking stock: integrating and differentiating multiple proactive behaviors. *Journal of Management*, 36(3): 633–662. DOI:10.1177/0149206308321554
- [13] Parker, S. K., Bindl, U. K., Strauss, K. 2010. Making things happen: A model of proactive motivation. *Journal of Management*, 36(4): 827–856. DOI:10.1177/0149206310363732
- [14] Ruepert, A. et al. 2016. Environmental considerations in the organizational context: A pathway to pro-environmental behavior at work. *Energy Research and Social Science*, 17: 59–70. DOI:10.1016/j.erss.2016.04.004
- [15] Schlett, C., Ziegler, R. 2013. Job emotions and job cognitions as determinants of job satisfaction: The moderating role of individual differences in need for affect. *Journal of Vocational Behavior*, 84: 74- 89. DOI:10.1016/j.jvb.2013.11.005
- [16] Strauss, K., Griffin, M. A., Rafferty, A. E. 2009. Proactivity directed toward the team and organization: The role of leadership, commitment and role-breadth self-efficacy. *British Journal of Management*, 20(3): 279–291. DOI:10.1111/j.1467-8551.2008.00590.x
- [17] Salanova, M., Schaufeli, W. B. 2008. A cross-national study of work engagement as a mediator between job resources and proactive behaviour. *International Journal of Human Resource Management*, 19(1): 116– 131. DOI:10.1080/09585190701763982

- [18] Scott, T., Mannion, R., Davies, H., Marshall, M. 2003. The quantitative measurement of organizational culture in health care: A review of the available instruments. *Health Services Research*, 38(3): 923–948. Available at: <http://doi.org/10.1111/1475-6773.00154>
- [19] Schein, E. H. 2004. Organizational Culture and Leadership. *Leadership*, 7: 437-448. DOI:10.1080/09595230802089917
- [20] Shore, L. M., Wayne, S. J. (1993). Commitment and employee behavior: comparison of affective commitment and continuance commitment with perceived organizational support. *The Journal of Applied Psychology*, 78(5): 774–780. DOI:10.1037/0021-9010.78.5.774
- [21] Sharifirad, M. S. (2013). Transformational leadership, innovative work behavior, and employee well-being. *Global Business Perspectives*, 1(3), 198–225. DOI:10.1007/s40196-013-0019-2
- [22] Teng, C. I., Shyu, Y. L., Chang, H. Y. (2007). Moderating effects of professional commitment on hospitals in Taiwan. *Journal of Professional Nursing*, 23: 47-54.
- [23] Vandenberghe, C., Basak Ok, A. (2013). Career commitment, proactive personality, and work outcomes: A cross-lagged study. *Career Development International*, 18(7): 652–672. DOI:10.1108/CDI-02-2013-0013
- [24] Wilkins, A. L., Ouchi, W. G. 1983. Efficient Cultures: Exploring the Relationship Between Culture and Organizational Performance. *Administrative Science Quarterly*, 28(3): 468–481. DOI:10.2307/2392253
- [25] Yiing, L. H., Ahmed, K. Z. Bin. 2009. The moderating effects of organizational culture on the relationships between leadership behavior and organizational commitment and between organizational commitment and job satisfaction and performance. *Leadership & Organization Development*, 30(1): 53 – 86. DOI:10.1108/01437730910927106
- [26] Zheng, W., Yang, B., McLean, G. N. (2010). Linking organizational culture, structure, strategy, and organizational effectiveness: Mediating role of knowledge management. *Journal of Business Research*, 63(7): 763–771. DOI:10.1016/j.jbusres.2009.06.005
- [27] Zhang, Z., Wang, M., Shi, J. (2012). Leader-follower congruence in proactive personality and work outcomes: The mediating role of leader-member exchange. *Academy of Management Journal*, 55(1), 111–130. DOI:10.5465/amj.2009.0865

**JOURNAL**   
of Applied Economic Sciences

ISSN 2393 – 5162

ISSN - L 1843-6110