

JOURNAL 
of Applied Economic Sciences



Volume XII
Issue 3 (49) Summer 2017

ISSN-L 1843 - 6110
ISSN 2393 - 5162

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Journal of Applied Economic Sciences

ISSN-L 1843 - 6110

ISSN 2393 – 5162

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Layout Redesign for Cost Reduction and Efficiency Improvement

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Suggested Citation:

Kovács, G. 2017. Layout redesign for cost reduction and efficiency improvement. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 663 – 670.

Abstract:

In a global competitive market, the manufacturing companies have to produce cost effective products which can be realized by minimized production cost and higher productivity. The effective facility planning can reduce significantly the operational costs of companies. Adequate facility layout can result the productivity improvement of the manufacturing activity. The Facility Layout Problem (FLP) is relating to location of objects (departments, workstations, machines, etc.) on a given site and the material flow between these objects.

The goal of this study is to show the reasons, objectives and steps of a layout redesign process. A described case study, which is a part of an industrial R+D project, shows how can be optimized the arrangement of workstations on the shop floor to reduce movement of raw materials, components, equipment and workers, to minimize the total workflow and the cross material flow in the manufacturing system, to provide free space for other additional value adding activities and to create safe work environment at a real manufacturing system.

Keywords: layout redesign; process improvement; cost reduction

JEL Classification: D24 ; L23 ; C61

Introduction

In the growing market competition, where the customer demands are changing continuously the enterprises have to focus on cost reduction and profitability (Kovács and Kot 2016).

This research study is very important and actual, because the cost reduction and the improvement of productivity are very important goals of all of manufacturing companies. The optimal facility layout is an effective tool in cost reduction by enhancing the productivity. Facility layout design involves a systematic physical arrangement of different departments, workstations, machines, equipment, storage areas and common areas in a manufacturing industry (Stefanescu *et al.* 2008, Naik and Kallurkar 2016).

The article is original and unique, because beside the description of theoretical background relating to the layout redesign, a practical method was also introduced in a case study. In the article a real plant layout redesign was described. More alternatives were planned for the layout and were compared based on 4 indicators (total travel distance of goods, amount of total workflow in the whole assembly process, amount of cross workflow on the shop floor and available free space).

The goal of the study is to show how can be optimized the arrangement of workstations to reduce movement of goods and workers, to minimize the total workflow and the cross material flow in the system, to provide free space on the shop floor and to create safe work environment.

Conclusion

This research study is very important and actual, because the cost reduction and the improvement of productivity are very important goals of all of manufacturing companies.

The article is original and unique, because beside the description of theoretical background relating to the layout redesign, a practical method was also introduced in a case study. The effective facility planning can reduce significantly the operational costs of companies and improve the performance of production lines. The most important reasons of redesign of facility layouts are the continuously fluctuating customer demands, resulting changes in product portfolio, production volume, changes in manufacturing process and technology.

The goal of this study was to show the main objectives of the facility layout planning and the general types of facility layouts. The reasons, objectives and most general steps of a layout redesign process were introduced in a case study. In this article a design method was introduced for re-layout of a manufacturing plant, and confirmed that the layout redesign is an effective tool for process improvement.

In the article a real plant layout redesign was described, which is a part of an industrial R+D project. More alternatives were planned for the layout and were compared based on 4 indicators (total travel distance of goods, amount of total workflow in the whole assembly process, amount of cross workflow on the shop floor and available free space). It can be concluded, that the value of all of the analyzed 4 indicators was improved after the re-layout.

After the rearrangement of the workstations the movement of goods, equipment and workers was reduced. Total cross material flow and the total workflow in the manufacturing system was also reduced to provide safe work environment and reduce material flow cost. Further advantage of the redesign is the available free floor space which can be used for future extension or change in the layout to accommodate new machine.

The described case study showed how can be improved the efficiency and reduced manufacturing cost of a real life manufacturing system by layout redesign.

References

- [1] Bhowmik, R. 2008. An approach to the facility layout design optimization. *International Journal of Computer Science and Network Security*, 8(4): 212-220.
- [2] Khoshnevisan, M., Bhattacharya, S., Smarandache, F. 2016. *Optimal plant layout design for process-focused systems*, Available at: <https://arxiv.org/ftp/math/papers/0302/0302031.pdf> (accessed December 12, 2016).
- [3] Korhan, O. 2016. *Facilities planning and design - IENG441*, lecture notes, Department of Industrial Engineering, Eastern Mediterranean University, Available at: <http://ie302.cankaya.edu.tr/uploads/files/file/LectureNotes/IENG441%20Facilities%20Planning%20and%20Design%20-%20Lecture%20Notes.pdf> (accessed October 10, 2004).
- [4] Kovács, G.Y., Kot, S. 2016. New logistics and production trends as the effect of global economy. *Polish Journal of Management Studies*, 14(2): 115 - 126.
- [5] Kovács, G.Y., Tamás, P. 2015. *Introduction and Analysis of Production Processes*. (in Hungarian), textbook, University of Miskolc, Institute of Logistics, ISBN 978-963-358-103-2.
- [6] Naik, B.S., Kallurkar, S. 2016. A Literature review on efficient plant layout design. *International Journal of Industrial Engineering Research and Development*, 7(2): 43–51.
- [7] Ojaghi, Y., Khademi, A., Yusof N.M., Renani, N.G., Syed Helmi, S.A. 2015. Production Layout Optimization for Small and Medium Scale Food Industry, *Procedia CIRP*, 26: 247-251
- [8] Ostwald, P.F., Muñoz, J. 1997. *Manufacturing Processes and Systems*. ISBN: 978-0-471-04741-4
- [9] Riyad, H., Kamruzzaman, R., Subrata, T. 2014. Increasing productivity through facility layout improvement using systematic layout planning pattern theory, *Global Journal of Researches in Engineering: J - General Engineering*, 14(7): 1-7.

- [10] Stefanescu L., Ungureanu L., Matei I.V. 2008. Reengineering as efficient solution to redesign activities and processes of an enterprise, *Journal of Applied Economic Sciences*, 3(2): 161-167
- [11] Tompkins, J.A., White, J.A., Bozer Y.A., Tanchoco J.M.A. 2010. *Facilities Planning, 4th Edition*, John Wiley & Sons Inc. ISBN-13: 978-0470444047; ISBN-10: 0470444045
- [12] Zhang, M., Batta, R., Nagi, R. 2016. *Designing manufacturing facility layouts to mitigate congestion, 2009*, Available at: <http://www.acsu.buffalo.edu/~batta/designing.pdf> (accessed September 2, 2016).

Analysis of the Efficiency of Specialization Centers Formation in High-Tech Industry

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Suggested Citation:

Batkovskiy, A.M., Batkovskiy, M.A., Klochkov, V.V., Semenova, E.G., Fomina, A.V. 2017. Analysis of the efficiency of specialization centers formation in high-tech industry. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 671 – 686.

Abstract:

The article deals with the problem of effective formation of specialization centers in the process of restructuring high-tech industries. The criteria for the creation and operation efficiency of such facilities are substantiated. Economic-mathematical models are proposed for choosing the optimal variant for creating a specialization center from several alternatives and for estimating the influence of the equipment load factor, as well as the planned market share on the efficiency of creating a center of specialization. Parametric calculations were carried out based on the parameters of technologies characteristic of the modern aviation industry. The boundary coefficients of the equipment load and the share occupied by the specialization center in the global market are defined, under which its creation and operation can be effective. Based on the identified patterns, recommendations were made on the composition of the indicators that should be taken into account when analyzing projects for creating specialization centers and monitoring their operation. The rules are grounded for making managerial decisions in the selection of projects for creating specialization centers and choosing the directions for their development.

Keywords: specialization centers; capacity utilization; monitoring; economic-mathematical model; efficiency; aviation industry

JEL Classification: L60; L69; C02; O12

Introduction

Specialization centers (SC) in the Russian high-tech industry (including in the aircraft engineering) are formed within the framework of the transition from the traditional organization of production (with vertical integration and full production cycle at each enterprise) to a new, more cost-effective network industrial model. Formation of the SC system is the main task of industrial restructuring of the integrated structures of the Russian aviation industry at this stage of its development. Common problems of efficiency analysis, operation monitoring and the substantiation for creating specialization centers in the industry include development of criteria that are appropriate to monitor for making informed decisions about the creation and development of these structures.

Conclusion

The analysis of the factors determining the efficiency of the establishment and operation of specialization centers in the Russian aviation industry demonstrated that efficiency can be determined by:

- the possibility of increasing the production equipment utilization rate, which otherwise would have been established at the enterprises of the full production cycle;
- the possibility of cost-effective implementation of more economical technologies and equipment of higher capacity.

Calculations show that if more efficient equipment provides a significant reduction of specific direct production costs by 30-50%, then with the cost structure typical for the modern aviation industry, low utilization rates of about 50% are also permissible for the specialization center. Thus, the load factor alone cannot be considered as a decisive criterion of efficiency of a specialization center creation and operation.

Also, when establishing specialization centers, the required amount of investment in the creation or expansion of the corresponding capacities should not be considered as a decisive criterion when choosing alternative siting options, due to the cost structure typical for the modern aviation industry, in which direct costs predominate rather than fund-creating ones.

At the same time, the expected or actual market share of the relevant components or production services can significantly determine the average labor productivity, the cost of production and the profitability of the specialization center operation. If the expected share of the global market is of the order of several percent, one can expect a reduction in the average labor productivity by 40-50%, in comparison with the world leaders' level.

Acknowledgements

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

References

- [1] Aghion, P., Cai, J., Dewatripont, M., Du, L., Harrison, A., Legros, P. 2015. Industrial policy and competition. *American Economic Journal: Macroeconomics*, 7(4): 1-32. DOI: 10.1257/mac.20120103
- [2] Ashkenas, R., Ulrich, D., Jick, T., Kerr, S. 2015. *The boundaryless organization: Breaking the chains of organizational structure*. Jossey-Bass, ISBN: 978-1-119-17787-6, 384 pp.
- [3] Baibakova, E.Y., Klotchkov, V.V. 2010. Economic aspects of formation of network organizational structures in the Russian high technology industry. *Administration of Large Systems. Special edition 30.1 "Network models in management"*, 697-721. [in Russian].
- [4] Batkovskiy A.M., Batkovskiy M.A., Klochkov V.V., Semenova E.G., Fomina A.V. 2016. Implementation Risks in Investment Projects on Boosting High-Tech Business Production Capacity: Analysis and Management. *Journal of Applied Economic Sciences. Romania: European Research Centre of Managerial Studies in Business Administration*, XI, 6(44): 1200-1209.
- [5] Batkovskiy A.M., Batkovskiy M.A., Kravchuk P.V., Semenova E.G., Fomina A.V. 2015. Development of Economic Assessment of Technologies. *Mediterranean Journal of Social Sciences. MCSER Publishing, Rome-Italy*, 6(4): 22-33, S4, DOI: [10.5901/mjss.2015.v6n4s4p22](https://doi.org/10.5901/mjss.2015.v6n4s4p22)
- [6] Batkovskiy A.M., Kalachikhin P.A., Semenova E.G., Telnov Yu.F., Fomina A.V. 2016. Component Methodology for Creating and Implementing Organizational Innovations in Business Companies. *Indian Journal of Science and Technology*, 9(27): 121-134. DOI: [10.17485/ijst/2016/v9i27/97658](https://doi.org/10.17485/ijst/2016/v9i27/97658)
- [7] Benkard, C.L. 2004. A Dynamic Analysis of the Market for Wide-bodied Commercial Aircraft. *Review of Economic Studies*, 71(3): 581-611. DOI: 10.3386/w7710
- [8] Bodie, Z., Kane, A., Marcus, A.J. 2014. *Investments*, 10th Edition. McGraw-Hill Education, ISBN-10: 007772061X; ISBN-13: 9780077720612

- [9] Certo, S. 2015. *Supervision: Concepts and Skill-Building*. 9th Revised Edition, McGraw-Hill Higher Education, US, ISBN-10: 007772061X; ISBN-13: 9780077720612, 608 pp.
- [10] Chang, S. J., Wu, B. 2014. Institutional barriers and industry dynamics. *Strategic Management Journal*, 35(8): 1103-1123. DOI:10.1002/smj.2152
- [11] Cruz-Cázares, C., Bayona-Sáez, C., García-Marco, T. 2013. You can't manage right what you can't measure well: *Technological innovation efficiency*. *Research Policy*, 42(6): 1239-1250. DOI: [10.1016/j.respol.2013.03.012](https://doi.org/10.1016/j.respol.2013.03.012)
- [12] Faria, A.J., Wellington, W.J. 2014. Validating business simulations: does high market share lead to high profitability? *Developments in Business Simulation and Experiential Learning*, 32: 177-121. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.455.2993&rep=rep1&type=pdf>
- [13] Folmer, J., Schrüfer, C., Fuchs, J., Vermum, C., Vogel-Heuser, B. 2016. Data-driven valve diagnosis to increase the overall equipment effectiveness in process industry. In *Industrial Informatics (INDIN), 2016 IEEE 14th International Conference on* 1082-1087 pp. DOI: [10.1109/INDIN.2016.7819326](https://doi.org/10.1109/INDIN.2016.7819326)
- [14] Greiner, M. 2015. *Overall Equipment Effectiveness (OEE). Approaches for Improvement*. GRIN Verlag, ISBN (eBook): 9783668101234; ISBN (Book) 9783668101241, 8p., Available at: <http://www.grin.com/en/e-book/311310/overall-equipment-effectiveness-oeo-approaches-for-improvement>
- [15] Hakansson, H. (Ed.). 2015. *Industrial Technological Development (Routledge Revivals): A Network Approach*. Routledge, Reissue edition (January 23, 2015), ISBN-10: 1138850160; ISBN-13: 978-1138850163, 244 pp.
- [16] Hansen, N.W. 2016. International company restructuring and the effects on high-skilled employees in lead companies. *Competition and Change*, 20(4): 237-254. DOI: 10.1177/1024529416655269
- [17] Kaplan, R.S., Atkinson, A.A. 2009. *Advanced Management Accounting*. 3rd Edition. PHI Learning. Published by PHI Learning, ISBN-10: [8120328248](https://doi.org/8120328248); ISBN-13: [9788120328242](https://doi.org/9788120328242)
- [18] Klotchkov, V.V. 2016. The analysis of interrelation between the indicators of enterprise efficiency and productive capacity utilization (a case study of the aviation industry). *Audit and Financial Analysis*, 2: 63-74
- [19] Klotchkov, V.V., Tsiklon B.Ye. 2011. Minimization of costs and management of the development of high technology industries (a case study of the aircraft industry). *Controlling*, 1 (37): 8-17 [in Russian]
- [20] Koren, Y., Wang, W., Gu, X. 2017. Value creation through design for scalability of reconfigurable manufacturing systems. *International Journal of Production Research*, 55(5): 1227-1242. DOI: [10.1080/00207543.2016.1145821](https://doi.org/10.1080/00207543.2016.1145821)
- [21] Kremer, N.SH., Putko B.A., Trishin I.M., Fridman M.N. 2005. *Research of operations in economy: textbook for universities*. Moscow: YURAIT. [in Russian]
- [22] Patel, V.B., Thakkar, H.R. 2014. Review Study on Improvement of Overall Equipment Effectiveness through Total Productive Maintenance. *Journal of Emerging Technologies and Innovative Research*, 1(7): 720-726
- [23] Ragulina, Y.V., Stroiteleva, E.V., Miller, A.I. 2015. Modeling of integration processes in the business structures. *Modern Applied Science*, 9(3): 145-158. DOI: [10.5539/mas.v9n3p145](https://doi.org/10.5539/mas.v9n3p145)
- [24] Ruigrok, W., Van Tulder, R. 2013. *The logic of international restructuring: The management of dependencies in rival industrial complexes*. Routledge, ISBN: 113616300X, 9781136163005, 360 pp.
- [25] Shahin, M., Doniavi, A., Solimanpur, M. 2015. A novel approach for optimization in a fuzzy finite capacity queuing model with system cost and expected degree of customer satisfaction. *Decision Science Letters*, 4(4) : 487-496. DOI: [10.5267/j.dsl.2015.6.001](https://doi.org/10.5267/j.dsl.2015.6.001)
- [26] Simonen, J., Svento, R., Juutinen, A. 2015. Specialization and diversity as drivers of economic growth: Evidence from High-Tech industries. *Papers in Regional Science*, 94(2): 229-247. DOI: 10.1111/pirs.12062

- [27] Suri, R. 2013. *Time is money. The Competitive Advantage of Quick Response Manufacturing*. Moscow: Binom Publishing, Laboratory of Knowledge
- [28] Suri, R. 1998. *Quick Response Manufacturing. A Companywide Approach to Reducing Lead Times*. Productivity Press, ISBN 9781563272011, 574 p.
- [29] Suri, R. 2010a. *It's About Time. The Competitive Advantage of Quick Response Manufacturing*. Productivity Press. Hardcover, ISBN-10: 1439805954; ISBN-13: 978-1439805954, 228 pp.
- [30] Suri, R. 2010b. A Quick Response to Office Management. *Industrial Management*, 52 (1): 25–30
- [31] Taha, H.A. 2001. *Introduction to Operations Research*. Moscow: Williams [in Russian]. Available at: <https://notendur.hi.is/~kth93/3.20.pdf>
- [32] Tintner, G., Sengupta, J.K. 2014. *Stochastic economics: stochastic processes, control, and programming*. Academic Press, ISBN-10: 1483247562; ISBN-13: 978-1483247564, 328 pp.
- [33] Uusitalo, L., Lehtikoinen, A., Helle, I., Myrberg, K. 2015. An overview of methods to evaluate uncertainty of deterministic models in decision support. *Environmental Modelling and Software*, 63: 24-31. DOI: [10.1016/j.envsoft.2014.09.017](https://doi.org/10.1016/j.envsoft.2014.09.017)
- [34] Vahdani, B., Mohammadi, M. 2015. A bi-objective interval-stochastic robust optimization model for designing closed loop supply chain network with multi-priority queuing system. *International Journal of Production Economics*, 170, A: 67-87. DOI: [10.1016/j.ijpe.2015.08.020](https://doi.org/10.1016/j.ijpe.2015.08.020)
- [35] Winston, W., Weinstein, A. 2016. *Defining your market: winning strategies for high-tech, industrial, and service firms*. Routledge, ISBN-10: 1317957776, ISBN – 13: 9781317957775, 196 pp.
- [36] Wright, T.P. 1936. Factors Affecting the Cost of Airplanes. *Journal of Aeronautical Sciences*, 3: 122-128. DOI: 10.2514/8.155
- [37] Wu, C. 2014. *Strategic aspects of oligopolistic vertical integration. Studies in Mathematical and Managerial Economics*, Elsevier, ISBN-10: 1483296164, ISBN-13: 9781483296166, 242 pp.
- [38] Xu, X., Qi, L., Cai, Y. 2015. Evaluation Research of Innovation Efficiency of the Equipment Manufacturing Industry Based On Super Efficiency DEA and Malmquist Index. *International Journal of Hybrid Information Technology*, 8(4): 27-34. DOI:10.14257/ijhit.2015.8.4.04
- *** Aircraft Engine and Engine Parts Manufacturing. 1997; 2002, 2007. In: *1997; 2002, 2007 Economic Census. Manufacturing*. Industry series. US Census Bureau.
- *** Aircraft Manufacturing. 1999, 2004, 2009. In: *1997; 2002, 2007 Economic Census. Manufacturing*. Industry series. US Census Bureau
- *** Other Aircraft Parts and Auxiliary Equipment Manufacturing: 1997, 2002, 2007. In: *1997; 2002, 2007 Economic Census. Manufacturing*. Industry series. U.S. Census Bureau, 1999; 2004, 2009
- *** The Russian Federation State Program. *Development of the aviation industry in the 2013-2025 years*. Available at: http://minpromtorg.gov.ru/common/upload/files/docs/Vizualizatsiya_GP_RAP_140507.pdf [in Russian]

Adaptive Market Hypothesis: Evidence from the Mexican Stock Exchange Index

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Suggested Citation:

Rojas, O., Coronado, S., Venegas-Martínez, F. 2017. Adaptive market hypothesis: Evidence from the Mexican stock exchange index. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 687 – 697.

Abstract:

This paper is aimed at studying the Adaptive Market Hypothesis (AMH) of the Mexican Stock Exchange Index (IPC, for its acronym in Spanish). To do this, we apply: 1) unit-root tests, 2) nonlinear tests, and 3) episodic nonlinearity tests. The main empirical finding is that the IPC goes through plenty of periods where the market behaves in an efficient way. That is, as a random walk, followed by some periods of adaptability where non-linearity in the series of the IPC returns is found.

Keywords: adaptive market hypothesis; financial markets; emerging markets

JEL Classification: D84; D53; E40; G15

Introduction

There have been many studies about the nonlinear behavior of financial markets and in particular after some classic papers: Dalle-Molle and Hinich (1995), Hinich and Patterson (2005) and (1985), Patterson and Ashley (2000). Such studies of nonlinear behavior aimed at studying the Adaptive Market Hypothesis (AMH) proposed by Lo (2005) and (2004). This theory states that markets switch between adaptive efficiency and adaptive inefficiency at different time periods and therefore are adaptable. According to this, the degree of market adaptive efficiency is related to different factors, as the magnitude of profit opportunities, the number of competing participants, and how they adapt to market signals. The AMH has some practical implications, among which are: risk-reward relationships that change over time according to the preferences of the market participants. These preferences affected by past prices and movements they experience from the point of view of natural selection contrasting to the weak-form of the Efficient Market Hypothesis (EMH) proposed by Fama (1970). Furthermore, arbitrage opportunities, being constantly created and disappearing, exist at different points in time and, therefore, the market goes from adaptive efficiency to adaptive inefficiency in different periods.

In the specialized literature there are several tests to detect nonlinearity in a time series. In this regard, Patterson and Ashley (2000) recommend a battery of such tests. Some of the most used nonlinear tests are those from Tsay (1986), Engle (1982), and Broock *et al.* (1996). In this research, we will apply these tests in order to detect the presence of nonlinear dependence in a time series and, therefore, to find out about market adaptive inefficiency. However, in order to test the AMH, it is not sufficient to show only nonlinear behavior of the whole series but also to reveal the different time periods where nonlinear phenomena occurs; see, for instance, Hinich and Patterson (1985), Hsieh (1991), Panagiotidis and Pelloni (2007), and Patterson and Ashley (2000).¹

¹ Regarding non-linear behavior of returns in Mexico see, for instance, Venegas-Martínez and Islas-Camargo (2005), and López-Herrera *et al.* (2009).

In this paper, we use the H and T4 tests from Hinich and Patterson (1985) and Wild *et al.* (2010) to provide evidence of the AMH in the Mexican Stock Exchange Index (IPC). To do this, we consider a sample of daily returns from 1994 to 2015 for detecting the periods of nonlinear serial dependence (adaptive inefficient periods) and, therefore, to examine how adaptive efficiency evolves through time. We believe that our results are relevant given that they shed light on the AMH for an emerging market. The H and T4 tests have been applied in similar contexts in Bonilla *et al.* (2008), Coronado-Ramírez *et al.* (2015) Coronado-Ramírez and Arreola (2011), Hinich and Serletis (2007), Lim *et al.* (2008), and Romero-Meza *et al.* (2007), among others.

There has been also a growing interest in the shift from the traditional EMH (absolute and static) to the AMH that captures the degree of adaptive efficiency at different periods of time. In this regard, Noda (2016) measured the degree of market adaptive efficiency in the Japanese stock market, Hiremath and Kumari (2014) focused on India's stock market, Alvarez-Ramirez *et al.* (2012), Ito and Sugiyama (2009) and Kim *et al.* (2011) found time varying adaptive efficiency in the U.S, Charles *et al.* (2012) and Neely *et al.* (2009) found evidence of AMH in the foreign exchange market, Lim *et al.* (2008) studied Asian markets, and Urquhart and McGroarty (2016) provided evidence of AMH in four major stock markets. Furthermore, Coronado-Ramírez *et al.* (2014) studied the international coffee market, applying nonlinear statistical tests to detect periods of adaptive inefficiency in the case of Colombian Arabica beans, while Coronado-Ramírez *et al.* (2015) studied the AMH in agricultural commodity futures contracts.

The structure of the paper is as follows. Section 2 provides the methodology employed in the present study. Section 3 describes the sample data. Section 4 presents the statistical tests and the empirical results. Finally, the conclusions are reached.

Conclusions

In this paper we have studied the AMH of the IPC. We applied unit-root tests in order to show that the time series of returns is stationary and, subsequently, we applied some nonlinear tests to examine the nonlinear structure of the series under study. We applied the H and T4 statistic to show how the series of returns went from plenty of periods where the market behaves in an efficient way, *i.e.*, as a random walk, followed by some periods of adaptability, *i.e.*, where non-linearity in the IPC return series was found.

References

- [1] Alvarez-Ramirez, J., Rodriguez, E. and Espinosa-Paredes, G. 2012. Is the US stock market becoming weakly efficient over time? Evidence from 80-year-long data. *Physica A: Statistical Mechanics and its Applications*, 391(22): 5643-5647. Available at: <http://dx.doi.org/10.1016/j.physa.2012.06.05>
- [2] Barnett, W.A., Gallant, A.R., Hinich, M.J., Jungeilges, J.A., Kaplan, D.T. and Jensen, M.J. 1997. A single-blind controlled competition among tests for nonlinearity and chaos. *Journal of Econometrics*, 82(1): 157–192. [doi:10.1016/S0304-4076\(97\)00081-X](https://doi.org/10.1016/S0304-4076(97)00081-X)
- [3] Bonilla, C.A., Maquieira, C.P. and Romero-Meza, R. 2008. Nonlinear behaviour of emerging market bonds spreads: the Latin American case. *Applied Economics*, 40(22): 2697-2702. Available at: <http://dx.doi.org/10.1080/00036840600970245>
- [4] Brock, W.A., Hsieh, D.A. and LeBaron, B.D. 1991. *Nonlinear Dynamics, Chaos, and Instability: Statistical Theory and Economic Evidence*. MIT Press, Boston. ISBN: 978-0262023290, ISBN-10: 0262023296
- [5] Brock, W.A., Scheinkman, J.A., Dechert, W.D. and LeBaron, B. 1996. A test for independence based on the correlation dimension. *Econometric Reviews*, 15(3): 197-235. Available at: <http://dx.doi.org/10.1080/07474939608800353>
- [6] Chandran, V., Elgar, S. and Vanhoff, B. 1994. Statistics of tricoherence. *IEEE Transaction on Signal Process*, 42 (12): 3430–3440. DOI: 10.1109/78.340777
- [7] Charles, A., Darné, O. and Kim, J.H. 2012. Exchange-rate return predictability and the adaptive markets hypothesis: Evidence from major foreign exchange rates. *Journal of International Money and Finance*, 31(6): 1607-1626. Available at: <http://dx.doi.org/10.1016/j.jimonfin.2012.03.003>
- [8] Cont, R. 2001. Empirical properties of asset returns: stylized facts and statistical issues. *Quantitative Finance*, 1: 223–236. Available at: <http://citeseer.ist.psu.edu/viewdoc/summary?doi=10.1.1.16.5992>
- [9] Coronado-Ramírez, S. Arreola, G. L. 2011. Identificación de episodios de dependencia no lineal en el peso mexicano. *Cuadernos de Economía*: 30(55): 91–104. Available at: <http://www.revistas.unal.edu.co/index.php/ceconomia/article/view/28225/31728>
- [10] Coronado-Ramírez, S., Celso-Arellano, P. L., Rojas, O. 2015. Adaptive Market Efficiency of Agricultural Commodity Futures Contracts. *Contaduría y Administración*, 60(2): 389–401. Available at: <http://www.cya.unam.mx/index.php/cya/article/view/717>
- [11] Coronado-Ramírez, S., Ramírez-Grajeda, M. and Celso-Arellano, P.L. 2014. Inefficiency in the international coffee market: The case of Colombian arabica. *African Journal of Agricultural Research*, 9(5): 556-561. DOI: 10.5897/AJAR11.2228
- [12] Dalle Molle, J.W. and Hinich, M.J. 1995. Trispectral analysis of stationary random time series. *Journal of the Acoustical Society of America*, 97: 2963-2978. Available at: <http://dx.doi.org/10.1121/1.411860>
- [13] Dickey, D.A. and Fuller, W.A. 1979. Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association*, 74(366): 427-431. Available at: <http://www.jstor.org/stable/2286348>

- [14] Elliott, G., Rothenberg, T.J. and Stock, J.H. 1996. Efficient tests for an autoregressive unit root. *Econometrica*, 64(4): 813–836. Available at: <http://www.jstor.org/stable/2171846>
- [15] Engle, R.F. 1982. Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. *Econometrica*, 50(4): 987-1007. Available at: <http://www.jstor.org/stable/1912773>
- [16] F de Lima, P.J. 1996. Nuisance parameter free properties of correlation integral based statistics. *Econometric Reviews*, 15(3): 237–259. Available at: <http://dx.doi.org/10.1080/07474939608800354>
- [17] Fama, E.F. 1970. Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2): 383-417. Available at: <http://www.jstor.org/stable/2325486>
- [18] Hinich, M.J. and Patterson, D.M. 2006. *Detecting Epochs of Transient Dependence in White Noise, Money, Measurement and Computation*. Edited by M. Belong. J. Binner. Palgrave. ISBN 1403947937, p. 61-75
- [19] Hinich, M.J. and Patterson, D.M. 1985. Evidence of nonlinearity in daily stock returns. *Journal of Business & Economic Statistics*, 3(1): 69-77. Available at: <http://www.jstor.org/stable/1391691>
- [20] Hinich, M.J. and Serletis, A. 2007. Episodic nonlinear event detection in the Canadian exchange rate. *Journal of the American Statistical Association*, 102(477): 68-74. Available at: <http://www.jstor.org/stable/27639820>
- [21] Hiremath, G.S. and Kumari, J. 2014. Stock returns predictability and the adaptive market hypothesis in emerging markets: Evidence from India. *Springerplus*, 3(428): 1-14. DOI: 10.1186/2193-1801-3-428
- [22] Hsieh, D.A. 1991. Chaos and Nonlinear Dynamics: Application to Financial Markets. *The Journal of Finance*, 46(5): 1839–1877. DOI: 10.1111/j.1540-6261.1991.tb04646.x
- [23] Im, K.S., Lee, J. and Tieslau, M.A. 2014. *More powerful unit root tests with non-normal errors*. Festschrift Honor Peter Schmidt. DOI: 10.1007/978-1-4899-8008-3_10
- [24] Ito, M. and Sugiyama, S. 2009. Measuring the degree of time varying market inefficiency. *Economics Letters*, 103(1): 62-64. Available at: <http://dx.doi.org/10.1016/j.econlet.2009.01.028>
- [25] Keenan, D.M. 1985. A Tukey nonadditivity-type test for time series nonlinearity. *Biometrika*, 72(1): 39–44. Available at: <http://www.jstor.org/stable/2336333>
- [26] Kim, J.H., Shamsuddin, A., Lim, K.-P. 2011. Stock return predictability and the adaptive markets hypothesis: Evidence from century-long US data. *Journal of Empirical Finance*, 18(5): 868-879. Available at: <http://dx.doi.org/10.1016/j.jempfin.2011.08.002>
- [27] Lim, K.-P., Brooks, R.D. and Hinich, M.J. 2008. Nonlinear serial dependence and the weak-form efficiency of Asian emerging stock markets. *Journal of International Financial Markets, Institutions & Money*, 18(5): 527-544. Available at: <http://dx.doi.org/10.1016/j.intfin.2007.08.001>
- [28] Lo, A.W. 2005. Reconciling efficient markets with behavioral finance: the adaptive markets hypothesis. *Journal of Investment Consulting*, 7(2): 21-44. Available at: <http://www.evidenceinvestor.co.uk/evidence/reconciling-efficient-markets-behavioral-finance-adaptive-markets-hypothesis/>
- [29] Lo, A.W. 2004. The adaptive markets hypothesis. *The Journal of Portfolio Management*, 30(5): 15-29. DOI: 10.3905/jpm.2004.442611
- [30] Neely, C.J., Weller, P.A. and Ulrich, J.M. 2009. The adaptive markets hypothesis: evidence from the foreign exchange market. *Journal of Financial and Quantitative Analysis*, 44(2): 467-488. DOI: 10.1017/S0022109009090103
- [31] López-Herrera, F., Venegas-Martínez, F. and Sánchez-Daza, A. 2009. Memoria larga de la volatilidad de los rendimientos del mercado mexicano de capitales. *Análisis Económico*, 24(56): 129-146.

- [32] Noda, A. 2016. A test of the adaptive market hypothesis using a time-varying AR model in Japan. *Financial Research Letters*, 17: 66–71. Available at: <http://dx.doi.org/10.1016/j.frl.2016.01.004>
- [33] Panagiotidis, T. and Pelloni, G. 2007. Nonlinearity in the Canadian and US labor markets: Univariate and multivariate evidence from a battery of tests. *Macroeconomic Dynamics*, 11(5): 613-637. Available at: <https://doi.org/10.1017/S1365100507060245>
- [34] Patterson, D.M. and Ashley, R.A. 2000. *A Nonlinear Time Series Workshop: A Toolkit for Detecting and Identifying Nonlinear Serial Dependence*. Springer. DOI: 10.1007/978-1-4419-8688-7
- [35] Perron, P. and Ng, S. 1996. Useful modifications to some unit root tests with dependent errors and their local asymptotic properties. *The Review of Economic Studies*, 63(2): 435–463. Available at: <http://www.jstor.org/stable/2297890>
- [36] Phillips, P.C.B. and Perron, P., 1988. Testing for a unit root in time series regression. *Biometrika*, 75(2): 335–346. DOI: 10.1093/biomet/75.2.335
- [37] Rojas, O. and Trejo-Pech, C. (2014). Financial Time Series: Stylized Facts for the Mexican Stock Exchange Index Compared to Developed Markets, in: Coronado-Ramírez, S., Celso-Arellano, P.L. and Trejo-Pech, C. (Eds.), *Nonlinear Time Series and Finance*. Universidad de Guadalajara, Mexico, 228–245.
- [38] Romero-Meza, R., Bonilla, C.A. and Hinich, M.J. 2007. Nonlinear event detection in the Chilean stock market. *Applied Economics Letters*, 14(7): 987–991. Available at: <http://dx.doi.org/10.1080/13504850600706024>
- [39] Tsay, R.S. 1986. Nonlinearity tests for time series. *Biometrika*, 73(2): 461-466. Available at: <http://www.jstor.org/stable/2336223>
- [40] Tukey, J.W. 1949. One degree of freedom for non-additivity. *Biometrics*, 5(3): 232–242. Available at: <http://www.jstor.org/stable/3001938>
- [41] Urquhart, A. and Hudson, R. 2013. Efficient or adaptive markets? Evidence from major stock markets using very long run historic data. *International Review of Financial Analysis*, 28: 130-142. Available at: <http://dx.doi.org/10.1016/j.irfa.2013.03.005>
- [42] Urquhart, A. and McGroarty, F. 2016. Are stock markets really efficient? Evidence of the adaptive market hypothesis. *International Review of Financial Analysis*, 47: 39–49. Available at: <http://dx.doi.org/10.1016/j.irfa.2016.06.011>
- [43] Venegas-Martínez, F. and Islas-Camargo, A. 2005. Volatilidad en los mercados de América Latina. Efectos de Largo plazo. *Comercio Exterior*, 55(11): 936-947. Available at: <http://revistas.bancomext.gob.mx/rce/magazines/84/2/Venegas.pdf>
- [44] Wild, P., Hinich, M.J. and Foster, J. 2010. Are daily and weekly load and spot price dynamics in Australia's National Electricity Market governed by episodic nonlinearity?. *Energy Economics*, 32(5): 1082–1091. Available at: <http://dx.doi.org/10.1016/j.eneco.2010.07.003>
- [45] Zivot, E. and Wang, J. 2006. *Modeling Financial Time Series with S-PLUS*. Springer. DOI: 10.1007/978-0-387-323

The Impact of the Global Crisis on the Stability of the Financial System

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Suggested Citation:

Kaya, H.D. 2017. The impact of the global crisis on the stability of the financial system. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 698 – 708.

Abstract:

We examine the impact of the recent global crisis on the stability of the global financial system. We use seven measures of stability that include Bank Z-Score, Bank non-performing loans, Bank capital, Bank credit, Regulatory capital, Liquid assets, and Provisions to non-performing loans. These data are from World Bank's Global Financial Development Database (GFDD). Our findings indicate that during the run-up to the crisis, there was no significant change in any of the stability measures. Our findings also indicate that, during the crisis period, banks' non-performing loans significantly increased while their liquid assets significantly decreased. Interestingly, Bank Z-Score, Bank capital, Bank credit, Regulatory capital, and Provisions to non-performing loans did not change significantly during the crisis period. When we look at the period after the crisis, we are seeing that banks reacted by reducing credits and increasing their regulatory capital. However, during this post-crisis period, banks suffered even more because of continuing increase in non-performing loans. We are hoping that these findings on the timing of changes in these measures will help banks and policymakers in devising strategies to deal with the problems before they occur.

Keywords financial system; stability of financial system; global crisis; financial crises

JEL Classification: G01; G10; G20; G21; G32

Introduction

In this study, we examine the impact of the recent global crisis on the stability of the global financial system. We use seven measures of stability that include Bank Z-Score, Bank non-performing loans, Bank capital, Bank credit, Regulatory capital, Liquid assets, and Provisions to non-performing loans. The data on these measures are from World Bank's Global Financial Development Database (GFDD).

We examine how these variables are affected during the pre-crisis period, the crisis period, and the post-crisis period. The results for the pre-crisis period will show us whether any of these variables can serve as indicators of an upcoming crisis. If a certain variable changes significantly during the run-up to a crisis, policymakers can use that variable as an indicator of an upcoming crisis and take precautions accordingly. The results for the crisis period will show us how the stability of the system is affected during a crisis. Our results for the post-crisis period will show us how the governments and central banks reacted to the crisis. We also expect to see some continuing effects of the crisis on some of these variables. Our argument here is that, for some of these measures, there is a longer-term effect that continues after the crisis.

There are several studies that attempt to find the possible indicators of a global financial crisis. Most of these studies focus on measures that relate to exchange rates. Edwards (1989), Frankel and Rose (1996), Bruggemann and Linne (1999), and Osband and Rijckeghem (2000) focus on nominal exchange rates mainly against the US dollar. Goldfajn and Valdes (1998) and Apoteker and Barthelemy (2000) focus on real exchange rates.

There are other studies that combine changes in interest rates, reserves and the exchange rate, and use this combination as an indicator of a crisis. Sachs, Tornell and Velasco (1996), Corsetti, *et al.* (1998), Fratzcher (1998), Kaminsky *et al.* (1998), Berg and Pattillo (1999), Tornell (1999), Bussiere and Mulder (1999, 2000), and

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Frankel and Wei (2005) combine exchange rates with changes in reserves and use this combination as an indicator. Other papers like Eichengreen, Rose and Wyplosz (1995), Herrera and Garcia (1999), and Hawkins and Klau (2000) combine changes in interest rates, reserves and the exchange rate, and use this as an indicator.

While all of these previous studies focus on many different measures, in this study, we want to focus on the stability of the financial system. We use the “stability” variables posted on World Bank’s Global Financial Development Database. Therefore, our first contribution is our focus on the impact of a crisis on “stability”. Also, as mentioned above, we look at three different periods: the pre-crisis period, the crisis period, and the post-crisis period. Therefore, our second contribution is to look at the issue from a wider perspective.

Our paper proceeds as follows: Section 1 summarizes the previous literature. Section 2 explains our hypotheses. Section 3 explains the data. Section 4 shows the empirical results. In the final section, we conclude.

Conclusion

In this study, we examine the impact of the recent global crisis on the stability of the global financial system. We use World Bank's Global Financial Development Database to access the data. This database has data on 203 countries around the world. The database has seven measures of stability that include Bank Z-Score, Bank non-performing loans, Bank capital, Bank credit, Regulatory capital, Liquid assets, and Provisions to non-performing loans.

As our first hypothesis states, we expect none of the stability measures to have been affected before the crisis started. Our findings confirm that. During the run-up to the crisis, there was no significant change in any of the seven stability measures.

Our second hypothesis deals with the crisis period. For the crisis period, our hypothesis is that the three stability measures that are directly affected by the crisis (*i.e.* "Bank Z-Score", "Bank non-performing loans to gross loans (%)", and "Liquid assets to deposits and short term funding (%)") to have worsened significantly. Our findings indicate that, during the crisis period, banks' non-performing loans significantly increased while their liquid assets significantly decreased. Interestingly, Bank Z-Score, Bank capital, Bank credit, Regulatory capital, and Provisions to non-performing loans did not change significantly during the crisis period.

Our third hypothesis deals with the post-crisis period. It states that, during the post-crisis period, all four "reaction" measures (*i.e.* "Bank capital", "Bank credit to bank deposits (%)", "Regulatory capital", and "Provisions to non-perf. loans") have improved while "Bank non-performing loans to gross loans (%)" have continued to deteriorate (*i.e.* some of the loans were due next year). For the post-crisis period, we find that banks reacted by reducing credits and increasing their regulatory capital. We also find that, during this post-crisis period, as expected, banks suffered even more because of continuing increase in non-performing loans. The other four variables did not change significantly in this post-crisis period.

We are hoping that these findings on the timing of changes in these measures will help banks and policymakers in devising strategies to deal with the problems before they occur. Not all measures deteriorate at the same time. Knowing the timing of these changes would allow banks and policymakers to take precautions beforehand. Future studies may focus on the regional impacts of the crisis.

References

- [1] Abiad, A. 2003. *Early Warning Systems: A Survey and a Regime-Switching Approach*, IMF Working Papers03/32, International Monetary Fund.
- [2] Apoteker, T., Barthelemy S. 2000. *Genetic Algorithms and Financial Crises in Emerging Markets*. International Conference Proceedings - CEFI. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=687741
- [3] Berg, A., and Pattillo, C. 1999. Are Currency Crises Predictable? A Test, *IMF Staff Papers*, 46 (2): 107-138.
- [4] Berkmen, P., Gasaton, G., Robert, R. and James, W. 2009, *The Global Financial Crisis: Explaining Cross-Country Differences in the Output Impact*, IMF Working Papers 09/280, International Monetary Fund.
- [5] Brüggemann, A., Linne, T. 1999. *How Good are Leading Indicators for Currency and Banking Crises in Central and Eastern Europe? An Empirical Test*, IWH Discussion Papers 95, Halle Institute for Economic Research.
- [6] Bussiere, M., and Christian M. 1999. *External Vulnerability in Emerging Market Economies - How High Liquidity Can Offset Weak Fundamentals and the Effects of Contagion*, IMF Working Papers 99/88, International Monetary Fund.
- [7] Bussiere, M., and Christian M. 2000. Political Instability and Economic Vulnerability, *International Journal of Finance & Economics*, 5(4): 309-30, October.
- [8] Corsetti, G., Paolo, P., and Nouriel, R. 1998. *Paper Tigers? A Model of the Asian Crisis*, Research Paper 9822, Federal Reserve Bank of New York.

- [9] Dominguez, K., Yukio, H., and Takatoshi I. 2011. *International Reserves and the Global Financial Crisis*, NBER Conference on the Global Financial Crisis, Bretton Woods, June.
- [10] Edwards, S. 1991, *Real Exchange Rates, Devaluation, and Adjustment: Exchange Rate Policy in Developing Countries* (MIT Press Cambridge, MA). 36 (2): 420-42.
- [11] Eichengreen, B., et. al. 1995. Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks, *Economic Policy*, 10 (21): 249-312, October.
- [12] Frankel, J., and Andrew R., 1996, Currency Crashes in Emerging Markets: An Empirical Treatment. *Journal of International Economics* 41, 3/4: 351-366.
- [13] Frankel, J., and Shang-Jin, W. 2005. "Managing Macroeconomic Crises", in *Managing Economic Volatility and Crises: A Practitioner's Guide*, edited by Joshua Aizenman and Brian Pinto (Cambridge University Press; paperback 2010).
- [14] Frankel, J.A., and Saravelos, G. 2010. *Are leading indicators of financial crises useful for assessing country vulnerability? Evidence from the 2008-09 global crisis*. No. w16047. National bureau of economic research.
- [15] Fratzscher, M., 1998, Why Are Currency Crises Contagious? A Comparison of the Latin American Crisis of 1994–1995 and the Asian Crisis of 1997–1998, *Weltwirtschaftliches Archiv*, 134 (4): pp. 664–91.
- [16] Ghosh, S.R., and Ghosh, A.R. 2003. Structural Vulnerabilities and Currency Crises, IMF Staff Papers, *Palgrave Macmillan Journals*, 50(3): 7.
- [17] Goldfajn, I., and Valdes, R.O. 1998, Are Currency Crises Predictable? *European Economic Review*, 42(3-5): 873-885.
- [18] Grier, K., and Grier, R. 2001. Exchange Rate Regimes and the Cross-Country Distribution of the 1997 Financial Crisis, *Economic Inquiry*, 39 (1): 139-48.
- [19] Han, R., and Melecky, M. 2013. *Financial inclusion for financial stability: Access to bank deposits and the growth of deposits in the global financial crisis*, Policy Research Working Paper No. 6577. World Bank, Washington, DC, Available at: <https://openknowledge.worldbank.org/handle/10986/16010>
- [20] Hawkins, J. and Klau, M. 2000. *Measuring potential vulnerabilities in emerging market economies*, BIS Working Papers 91, Bank for International Settlements.
- [21] Herrera, S., and Conrado, G.C. 1999. *User's Guide to an Early Warning System for Macroeconomic Vulnerability in Latin American Countries*, Policy Research Working Paper Series 2233, The World Bank.
- [22] Jara, A., Moreno, R., and Tovar, C.E. 2009. *The global crisis and Latin America: financial impact and policy responses*. Available at: http://www.bis.org/publ/qtrpdf/r_qt0906f.pdf
- [23] Kaminsky, G., Lizondo S., and Reinhart, C. 1998. Leading Indicators of Currency Crisis, IMF Staff Papers, *Palgrave Macmillan Journals*, 45(1).
- [24] Lane, P., and Milesi-Ferretti, G.M. 2011, The Cross-Country Incidence of the Global Crisis, *IMF Economic Review* 59: 77–110. IMF Working Papers 10/171.
- [25] Llaudes, R., Salman F., and Chivakul, M. 2011, *The Impact of the Great Recession on Emerging Markets*, IMF Research Bulletin, 12, no. 2, June. Summary of IMF WP 10/237.
- [26] Obstfeld, M., Shambaugh J., and Taylor, A. 2009, Financial Instability, Reserves, and Central Bank Swap Lines in the Panic of 2008, *American Economic Review*, 99(2): 480-86.
- [27] Obstfeld, M., Shambaugh, J., and Taylor, A. 2010, Financial Stability, the Trilemma, and International Reserves. *American Economic Journal: Macroeconomics*, *American Economic Association*, 2(2): 57-94, April.

- [28] Osband, K., and Rijckeghem, C. 2000, Safety from Currency Crashes, *IMF Staff Papers*, 47(2): 238-258.
- [29] Rose, A., and Spiegel, M. 2009. Cross-Country Causes and Consequences of the 2008 Crisis: Early Warning, *Japan and the World Economy* 24 (1): 1-16.
- [30] Sachs, J., Tornell, A., and Velasco, A. 1996. Financial Crises in Emerging Markets: The Lessons from 1995, *Brookings Papers on Economic Activity*, 27 (1): 147-199.
- [31] Tornell, A., 1999. *Common Fundamentals in the Tequila and Asian Crises*, NBER Working Paper No. 7139, DOI: 10.3386/w7139

Russian Experience of Practical Application of Banking Supervision Tools and Techniques

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Suggested Citation:

Vasilieva, A.G., Zaitseva, E.M., Ivlev, A.V., Puzankova, E.A., Rakhimova, L.M. 2017. Russian experience of practical application of banking supervision tools and techniques, *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 709 – 718.

Abstract:

Until recently, most economists have analyzed banking system from the standpoint of the stability of some of its elements: commercial banks. Last macroeconomic crisis has given new impetus to the study of banking supervision and the formation of understanding of this type of state regulation as an activity not only aimed to overcoming the crisis, but also operating as a constant system of measures to prevent and minimize negative impacts. In this context, the problem of efficient state regulation of banking activities through the use of supervision tools and techniques that contribute to the achievement by commercial banks of the necessary degree of public trust, becomes today particularly acute and deserves a detailed and comprehensive study and consideration. The article presents the results of a study of the Russian experience in the practical application of the main techniques of state regulation of banking activities, consisting in licensing, setting and analysis of norms of compliance with prudential supervision, regulating the bankruptcy of commercial banks, as well as tools facilitating their implementation. The authors seek to identify the advantages and disadvantages of the modern state regulation of the banking system on the Russian Federation scale.

Keywords: banking regulation; banking supervision; commercial bank

JEL Classification: E52 ; E58 ; G18 ; G28; H12

Introduction

An important condition for a successful and stable functioning of the modern banking system of market type is an effective state regulation of commercial banks' activities through the use of supervisory tools and techniques. During the last decade, the statement formulated by us has been confirmed by the changing positions of regulatory authorities in the economies of various countries: priorities, methodology and tools get transformed, in order to increase the efficiency and strengthen the importance of these bodies.

According to the results of a special study of 60 countries with developed market economies, it has been found that only in 19 countries the involvement of the Central Bank is considered poor, while in 41 countries its involvement is recognized as a evident and significant (Murychev 2007). At the same time, the main external factors

that enhance the regulatory power of the state, are usually the following: the state of the external macroeconomic environment, growing number of commercial banks, possibility to replenish the resource base of commercial banks by depositing public financial resources in them, globalization and internationalization of financial markets, intensification of state investment policy, formation and building effective "bank-client" relationship, bank capital concentration and centralization, need for continuous monitoring of the level of liquidity and optimization of the bank capital cost, scientific and technological progress, increase of scientific, research and experimental development expenditures in banking sphere, development of the financial market infrastructure and perfect substitutes, state participation in the capital of leading commercial banks, presence of group relationships of commercial banks conducting coordinated market policy, presence of the dominant commercial banks and abusive exercise of their economic power.

Conclusions

Summary of results of the study provides an opportunity to point out the following.

Firstly, in modern conditions, the Central Bank of the Russian Federation is a subject regulating the banking activities through banking supervision in the fields of maintaining the financial stability of the banking system, provision conditions for an effective regulation of banking activity by regulating the major aspects of banking activities and protecting the interests of creditors and depositors.

Secondly, the Central Bank of the Russian Federation has significantly expanded a set of banking supervision tools, giving priority, first of all, to economic tools of state regulation. At the moment, taking into account the current situation in the economy, the Central Bank of the Russian Federation introduces into practice the tools of state regulation as per international recommendations, for example, already in 2014 it has started applying new approaches to assess capital adequacy of commercial banks: Basel III.

Thirdly, the analysis of the efficiency of the use of modern system of techniques and tools of commercial bank regulation by the Central Bank of Russia across the country has revealed the ability of the vast majority of banks to adequately respond to new regulatory standards even in less favorable external environment of the banking business.

The results of the study can be used in the work of regulatory authorities, in particular, when choosing the priority directions of development of banking regulation, in determining the productive, non-standard techniques and tools to manage the crisis in banking activities.

References

- [1] Ageeva, I.A., Vasilieva, A.G. 2016. Practical aspects of state governance of commercial banks through the banking supervision (through the example the Chelyabinsk region). *Economics and Management of Control Systems*. 3.1(21): 111-118.
- [2] Balynskaya, N.R., Koptyakova, S.V. 2015. Influence of election legislation alteration on civil society development Russian practice. *European Journal of Science and Theology*. 1: 219-223.
- [3] Becht, M., Bolton, P., Röell, A. 2011. Why bank governance is different. *Oxford Review of Economic Policy*. 3: 437-463. Available at: <https://doi.org/10.1093/oxrep/grr024>
- [4] Bouheni F. B. 2013. *The effects of supervision on banking performance: European evidence*. Proceedings of the International conference "Governance and Control in Finance and Banking: A New Paradigm for Risk and Performance", Paris, France, April 18-19, 1-24. Available at: http://www.virtusinterpress.org/IMG/pdf/Faten_Ben_Bouheni_paper.pdf
- [5] Chortareas, G., Girardone, C., Ventouri, A. 2012. Bank supervision, regulation and efficiency: Evidence from the European Union. *Journal of Financial Stability*, 8: 292- 302. DOI: 10.1016/j.jfs.2011.12.001
- [6] Dubova, S.E. 2013. *Development of risk-based approaches to banking supervision and regulation*: Monograph. Moscow: Flinta. 180.
- [7] Kazakbieva, L.T. 2004. Banking supervision as a financial and legal category. *Financial Law*, 5: 65-68.
- [8] Laeven, L., Levine, R. 2009. Bank governance, regulation and risk taking. *Journal of Financial Economics*, 93: 259-275. DOI: 10.3386/w14113
- [9] Murychev, A.V. 2007. Banking supervision: what will it be? *Money and Credit*, 4: 7-19.
- [10] Peresetsky, A.A. 2009. *The econometric approach to remote analysis of Russian banking activity and banking supervision*. PhD Thesis in Economics: Central Economic Mathematical Institute of the Russian Academy of Sciences. Moscow, 50.
- [11] 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.

- [12] Sargsyan, T.S. 2006. Banking supervision: accelerator or break of the banking system development. *Money and Credit*, 9: 21-23.
- [13] Semkin, A.A. 2011. Banking supervision as a tool of state management of the Russian banking system. *Government and Local Self-Government*, 9: 35-38.
- [14] Summer, M. 2003. Banking Regulation and Systemic Risk. *Open Economies Review*, 14: 43-70. DOI:10.1023/A:1021299202181
- [15] Tarasova, N.A., Vasilieva, I. A., 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.
- [16] Vidyakin, D.S. 2010. Development of supervision over banking (consolidated) groups and bank holding companies in the Russian Federation. *Bulletin of the State University of Engineering and Economics. Series: Economy*. 3: 293-295.
- [17] Yermakov, S.L., Galkina, M.V. 2011. Improvement of banking supervision is the most important way to improve the efficiency of crisis management of the banking sector in an unstable economic environment. *Bulletin of Irkutsk State Economic Academy*. 6: 59-66.

The Impact of Exchange Rate Movements and Wage Levels on Foreign Direct Investment from South Korea into Bangladesh: Cost-Oriented Versus Market-Oriented Industry

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Suggested Citation:

Salam, M.A., Choi, S. 2017. The impact of exchange rate movements and wage levels on foreign direct investment from South Korea into Bangladesh: Cost-oriented versus market-oriented industry. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 719 – 725.

Abstract:

This paper examines the impact of exchange rate movements on foreign direct investment (FDI) from South Korea into Bangladesh for two different industries: cost-oriented industry versus market-oriented industry. Using the unique Bangladesh FDI panel data over 1990-2015, we find that a depreciation in Bangladesh currency against Korean currency significantly increases FDI from Korea into the Bangladesh cost-oriented industry. In addition, lower wage level in Bangladesh against Korea promotes greater FDI from Korea into Bangladesh. Our results are consistent with the prediction of the conventional theory and show Bangladesh is an attractive market for Korean investors for its relatively lower production cost advantages.

Keywords: exchange rate movements; wage levels; FDI, South Korea; Bangladesh; cost-oriented industry

JEL Classification: F21; F31

Introduction

For Bangladesh, South Korea has been one of the major sources of FDI. Bangladesh has started attracting Korean FDI, it being BDTK 20.1 million in 1990, which increased to BDTK 6084.2 million in 2015, *i.e.* more than a 300-fold increase. Further, of the nearly 60 countries providing FDI inflows in Bangladesh, South Korea ranks 3rd in 2015 (Bangladesh Bank). Yet, there is a dearth of empirical research focusing on impact of exchange rate movements on FDI inflows in Bangladesh from South Korea.

No empirical research has been undertaken in this area; this paper attempts to fill this gap by investigating the effects of changes in the exchange rate on FDI in market-oriented versus cost-oriented industry during the period 1990-2015. Following the methodology of Chen, Rau, and Lin (2006), our panel data analyses show that depreciation in Bangladesh currency against Korea and increase FDI from Korea for the cost-oriented industry. Also, relatively higher wage level in Korea against Bangladesh plays a significant role in boosting outward FDI from Korea to Bangladesh for the cost-oriented industry.

Concluding remark

This paper investigates the impact of exchange rate movements on FDI from Korea into Bangladesh with consideration of industry type: market-oriented versus cost-oriented. Using the unique dataset from Bangladesh Investment Development Authority (BIDA), Prime Minister's Office, Government of the People's Republic of Bangladesh, we find that appreciation in Korean currency against Bangladesh currency promotes greater FDI from Korea into Bangladesh especially for the cost-oriented industry. In addition, lower wage level in Bangladesh is important to determine more FDI from Korea into Bangladesh. These findings provide meaningful implications that Bangladesh is an attractive market for Korea in that it gives production cost advantages to Korean investors.

Acknowledgement

This work was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2014S1A3A2044643)

References

- [1] Alba, J. D., Wang, P. and Park, D. 2010. The impact of exchange rate on FDI and the interdependence of FDI over time. *Singapore Economic Review*, 55: 733–47.
- [2] Benassy-Quere, A., Fontagne, L. and Lahreche-Revil, A. 2001. Exchange rate strategies in the competition for attracting foreign direct investment, *Journal of the Japanese and International Economies*, 15(2): 178–98.
- [3] Buch, C. M., and Kleinert, J. 2008. Exchange rates and FDI: goods versus capital market frictions. *The World Economy*, 31: 1185–1207.
- [4] Campa, J.M. 1993. Entry by foreign firms in the United States under exchange rate uncertainty. *Review of Economics and Statistics*, 75: 614-622.
- [5] Chakrabarti, R., and Scholnick, B. 2002. Exchange rate expectations and foreign direct investment flows. *Weltwirtschaftliches Archive*, 138: 1- 21.
- [6] Crowley, P., and Lee, J. 2003. Exchange rate volatility and foreign investment: International evidence. *The International Trade Journal*, 17(3): 227-252.
- [7] Cushman, D.O. 1988. Exchange rate uncertainty and foreign direct investment in the United States. *Weltwirtschaftliches Archiv (Review of World Economy)*, 124(2): 322–36.
- [8] De Menil, G. 1999. Real capital market integration in the EU: how far has it gone? What will the effect of the euro be? *Economic Policy*, 28: 165-189.
- [9] Fratzscher, M. and Imbs, J. 2009. Risk sharing, finance, and institutions in international portfolios. *Journal of Financial Economics*, 94: 428–447.
- [10] Froot, K. A. and Stein, J. C. 1991. Exchange rate and foreign direct investment: an imperfect capital market approach. *Quarterly Journal of Economics*, 106: 1191–1217.
- [11] Goldberg, L.S. and Kolstad, C.D. 1995. Foreign direct investment, exchange rate variability and demand uncertainty. *International Economic Review*, 36: 855–73.
- [12] Kim, J. and Rhee, D. 2009. Trends and determinants of South Korean outward foreign direct investment. *Copenhagen Journal of Asian Studies*, 27(1): 126-54.
- [13] Kogut, B. and Kulatilaka, N. 1994. Operating flexibility, global manufacturing, and the option value of a multinational network. *Management Science, Focused Issue: Is Management Science International?* 40(1): 123-39.
- [14] Lee, B.S. and Min, B.S. 2011. Exchange rates and FDI strategies of multinational enterprises. *Pacific-Basin*

Finance Journal, 19: 586–603.

- [15] Lin, C.C., Chen, K.M. and Rau, H.H. 2010. Exchange rate volatility and the timing of foreign direct investment: Market-seeking versus export-substituting. *Review of Development Economics*, 14(3): 466 - 486.
- [16] Markusen, J.R., 1995. The boundaries of multinational enterprises and the theory of international trade. *Journal of Economic Review*, 9: 169-189.
- [17] Pain, N. and Welsum, V. 2003. Untying the gordian knot: The multiple links between exchange rates and foreign direct investment. *Journal of Common Market Studies*, 41: 823- 846.
- [18] Pozo, S. 1992. Conditional exchange rate volatility and the volume of international trade: evidence from the early 1900s. *Review of Economics and Statistics*, 74(2): 325–29.
- [19] Sazanami, Y., Yoshimura, S. and Kiyota, K. 2003. Japanese foreign direct investment to East Asia and exchange rate policies: some longer term policy implications after the crisis. *Keio Economic Studies*, 40(1): 1–26.
- [20] Takagi, S., and Shi, Z. 2011. Exchange rates movements and foreign direct investment: Japanese investment in Asia, 1987-2008. *Japan and World Economy*, 746: 1-8.
- [21] Tsay, Ruey S. 2002. *Analysis of Financial Time Series*. New York: Wiley. Available at: <http://www.lcs.poli.usp.br/~ablimalivros/Analysis%20of%20financial%20time%20series%20Tsay.pdf>
- [22] Urata, S. and Kawai, H. 2000. The determinants of the location of foreign direct investment by Japanese small and medium-sized Enterprises. *Small Business Economics*, 15(2): 79–103
- *** ECB (European Central Bank) 2012. Euro area cross-border financial flows. *Monthly Bulletin*, February, pp. 105–18.
- *** IMF (International Monetary Fund) 2010. The fund's role regarding cross-border capital flows [online; cited April 2014.]. Available at: <https://www.imf.org/external/np/pp/eng/2010/111510.pdf>
- *** UNCTAD. 2016. World Investment Report, New York: United Nations.

Improvement of Russian Pension Fund Scheme: Financial Priorities in Using Population's Incomes and Savings

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Suggested Citation:

Tatuev, A.A., Kutsuri, G.N., Rokotyanskaya, V.V., Lyapuntsova, E.V., Shanin, S.A. 2017. Improvement of russian pension fund scheme: financial priorities in using population's incomes and savings. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 726– 735.

Abstract:

At the present stage of socioeconomic development of Russia, the problems of citizens' pension security become more and more critical. In modern conditions there is no possibility to allow any social dependency, so, the new financial relationships contributing to integrate State and population's financial resources constitute a special science attraction. The primary aim of our study was to assess the real potential of the pension fund of Russia and analyze the expectations and behavior of Russians regarding their expenditures and savings. A special attention was paid to assessing the dynamics of population's income and attitude to the main financial institutions. The obtained results can be used to develop the tools which would help to increase citizens' activity in the sphere of co-financing of their retirement benefits. The final image of the forthcoming pension reform should be formed following a sufficient raise of the financial literacy of citizens and development of an effective informational-analytic mechanism able to guide the participants of pension co-financing system.

Keywords: pension system; sufficiency of pensions; population's savings; financial institutions; financial services for the citizens.

JEL Classification: G23; D91

Introduction

In recent times the fierce discussion about raising the retirement age has a well-defined tendency to increase, as the arguments in favor of social justice as well as economic possibilities and expediency seem quite convincing. Of

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course, Russian authorities recognize that one of the central socio-economic problems is the formation of prospects for pension system development (Medvedev 2016).

Nowadays a lot of attention is paid to this problem. Commonly, researchers consider general approaches (Galimova 2015), analyze the actual practical contradictions (Lyumarskaya 2014, Silchuk 2016); make special proposals to improve the national pension system (Mironova 2011) and even suggest quite innovative approaches (Borisov 2014).

In our opinion, the modern pension system, as well as some other elements of the Russian social security system has several serious problems, one of them is that the pension security system is no longer the system of protection against social risks (an inability to continue labor activity on reaching the age higher than the working age) but an institution generating social dependency, the pension being considered by the society as a kind of reward for working during the active period of life. Moseyko and Frolova (2014) have studied this problem from the position of its interconnection with development of a welfare state. Siebert (2005) has been observing it partly in the flow of cause-and-effect relations and purposes, after that it has got a figurative name of a "cobra effect". And, moreover, Blyahman (2012, 2013) introduced it as the subject of a new economic science.

Conclusion

Analytical and theoretical results of the conducted research showed that nowadays the State postemployment benefits obligations have sharply increased due to the accelerated indexation of pensions, low level of salaries, higher share of retired people, increased life expectancy and the increased number of early retirements. All these problems can endanger the population's retirement benefits within the existing distribution system. At the same time, Russian citizens do not accept the idea of personal responsibility for their own pensions.

References

- [1] Ageeva E.V. 2015. *Forming of additional pension: incentives and barriers*. The Russian Economy in Modern Conditions. Irkutsk: Izd. BSUEL, 3-8 pp.
- [2] Asekova, N.R. 2016. A role and value of non-state pension funds in provision of pensions of citizens of Russia. *Economy and Management: Problems, Decisions*, 2(4): 31-34.
- [3] Bartsits, S.Z. 2015. *Urgent regulatory issues of a retirement age as sales terms of the right to provision of pensions by the legislation of the Russian Federation*. Human right - the indicator of modern development of Russia Materials of the international scientific and practical conference. Under general edition of T.A. Soshnikova, 324-326 pp.
- [4] Blinova, M.G. 2015. Provision of pensions as form of social protection of citizens of Russia: problems and decisions. *SOTIS - Social Technologies, Researches*, 6(74): 15-19.
- [5] Borisov, A.F. 2014. A new pension reform as an innovation in the system of social management. *The Bulletin of the St. Petersburg University*, 4: 229-235.
- [6] Blyahman, L.S. 2013. World crisis and paradigm shift of economic development. *Messenger of the St. Petersburg University. Series 5. Economy*, 2: 3-21.
- [7] Blyakhman, L.S. 2012. Social policy as subject of new political economy. *Problem of Modern Economy*, 3: 39-46.
- [8] Dadayan, A.S. 2016. Problems of ensuring financial stability of the budget of the Pension Fund of the Russian Federation and way of their solution. *Problem of Economy and Management*, 9(61): 8-10.
- [9] Galimova, I.V. 2015. Problems of pension reform in Russia. *The Bulletin of the Leningrad State University of A. S. Pushkin*, 4: 69-74.
- [10] Guryeva, O.Yu. 2016. Reforming of the pension system of Russia on the basis of calculation of pension points. *News of higher educational institutions. Series: Economy, Finance and Production Management*, 1(27): 103-108.
- [11] Ignatyeva, V.I. 2016. Changes in the system of provision of pensions of the Russian Federation. *Science. Thought*, 2: 43-49.
- [12] Kookuyeva, V.V. 2015. Problems of ensuring worthy provision of pensions in Russia. In the world of discoveries, 12(72): 169-177.
- [13] Kudlayeva, Yu.O. 2016. Problems of development of additional pension provision in Russia. *The Young Scientist*, 6-6(110): 75-76.
- [14] Lavrentyeva, P.K. 2015. Reforming of early pensions in modern conditions. *Science and Education in Modern Conditions*, 3: 290-292.
- [15] Lyumarskaya, S.V. 2014. Questions of reforming of early provision of pensions. Messenger of the Udmurt University. *Economy and Right Series*, 2: 159-162.

- [16] Medvedev, D.A. 2016. Social and economic development of Russia: finding of new dynamics. *Questions of Economy*, 10: 5-30.
- [17] Mironova, O.S. 2011. Problems of enhancement of the pension system of Russia. *Bulletin of the Volga Region Institute of Management*, 2: 151-156.
- [18] Moseyko, V.V. Frolova, E.A. 2014. Social state vs. social dependency. *Messenger of the Tomsk State Pedagogical University*, 8: 102-107.
- [19] Petrushina, A.Y. 2015. Problems of reforming of the system of pension provision in the Russian Federation. *The Domestic Magazine of Social Work*, 3: 63-68.
- [20] Prokhorenko, Yu.I., Ruskikh, A.V. 2016. Problems of provision of pensions in the Russian Federation. *Scientific Notes the TOGA*, 7(1): 259-263.
- [21] Siebert, H. 2005. *Effect of a cobra: how to avoid delusions in the policy*. Lane with it. Moscow: New publishing house, 239 pp.
- [22] Silchuk, A. A. 2016. Offers on indexation of an insurance pension in the system of mandatory pension insurance. *The WORLD (Upgrade. Innovations. Development)*, 1: 48-53.
- [23] Solovyov, A. K. 2015. Actuarial analysis of conditions of change of a retirement age. *Finance*, 12: 44-49.
- [24] Tatuev, A.A., Bakhturazova, T.V. 2013. Structural features of money savings of population. *Terra Economicus*, 11(4): 64-69.
- [25] Yarullin, R.R., Musabirova, R.A. 2016. Sushchnost, Problems and ways of enhancement of provision of pensions of the population. *Science Symbol*, 5-1 (17): 252-254.

Premises for Business Activities: Economical Growth in an Uncertain World

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Suggested Citation:

Rădescu, O.D. 2017. Premises for business activities: economical growth in an uncertain world. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 736– 745.

Abstract:

Interviews of 1409 corporate executive officers (CEO) made at the end of 2015 in 83 countries including Romania, managers of any company can become a theoretical support as inspirational material during the development of strategies and trade policies. A data analysis of these interviews, from a point of view, is made in our paper (2016 being a forecast year). The six appendixes accompanying our analysis give a touch of clarity and information to our paper.

Keywords: economic, growth, uncertain, company

JEL Classification: F43, O47.

Introduction

Business premises for activities can be created in an empirical or theoretical base. Studying the performance of activities of newly created companies with inexperienced managers, with potential economic theory is equivalent to develop recommendations destructive. For commercial strategies analysts, practitioners of the brown and most experienced companies in the world, based on economic theory, the study of critical update managerial methods shall develop policies and strategies of the organization, production and marketing. Managers' intentions in companies (hereinafter managers formally responsible for the executive of corporation or company are rated in abbreviation CEO), for example the CEO in relation to some issues, activities are different.

It is important to know the intentions of these "deans" of companies on the economic situation globally and in Romania at different times of the years 2012-2016 and in the future periods in which conducted the survey 19 CEO, (The Staff of the Corporate Executive Board. 2010) in order to examine whether changes in terms of improvement or deterioration, growth prospects even if they were made in the event of threats own business, to the outlook for company growth (Appendix 4), (TI. 1-TI.8). Policies and business strategies of the company should be a kind of "rules" of economic behavior, productive, commercial – of the company in the different favorable and less favorable situation in which to find company. Such rules can be developed separately for each company. In this analytical product experience of successful companies can serve a theoretical scientific basis.

Conclusions

In 2015 the economic situation compared with 2016, according to the survey CEO minimal changes occurs in Romania; and maximum changes according to the same survey, economic changes in 2014 compared to 2016, taking place also in Romania (we think it can not be wrong if we say that the maximum changes are taking place globally in 2015 compared with 2016).

In the process of developing strategies and trade policies, company managers must take into account global trends (Ștefănescu and Ungureanu 2006). The global economic situation during 2015, 2016 remained at just 11% and 35% reported a deterioration, but 22% said that it had improved. Regarding Romania found an improvement in a 14% but remained as 13% and 11% considered damage; the global economic situation in 2014, in 2016 only 26% felt deterioration and 39% did not notice any improvement.

In Romania a total negativism in the same time period: 12% do not consider any improvement, 30% remained even so, 25% we saw a deterioration and 33% of respondents have not taken any decision. In economic period 2015, 2016, in Romania, 21% of the interviewed considered threats to growth prospects. In 2017, we still

might ask: where are we going and what are the political and business trends? (Appendix 1)

References

- [1] Rădescu, O.D. 2010. *Globalization and other trends of European trade policy*, Editura Sitech, Craiova, 334 pp.
 - [2] Simon, I. 2016. *Redefining business success in a changing world: Global survey of investor and CEO views*. Country Managing Partener PwC Romania.
 - [3] Ștefănescu, A., Ștefănescu, L., Ciora, I. L. (2009). Intelligent tools and techniques for modern management. *Chinese Business Review*, 8(2): 46-56.
 - [4] Ștefănescu, A. (2010). Intelligent Agent Approach for Business Process Management. *Theoretical and Practical Research in Economic Fields*, Volume I, 2(2): 253-256.
 - [5] Ștefănescu, L., Ungureanu, L. (2006). Using data warehouse for the decisional process of a sustainable firm. *ICCCC 2006*, 449-459.
 - [6] Ungureanu, L., Matei, I. V. (2007). Nonlinear problems in economic development. *Journal of Applied Economic Sciences*, 2(1): 2-12.
- *** Bureau of Business Research and Nebraska Business Forecast Council (2015). *Steady Growth in an Uncertain World*. Business in Nebraska. Paper 158. Available at: <http://digitalcommons.unl.edu/bbrbin/158>
- *** The Staff of the Corporate Executive Board. 2010. *The role of employee engagement in the return to growth* *Bloomberg Businessweek*.

A Multi-Level Agent-Based Model of Reinsurance

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Suggested Citation:

Yahyaoui, F., Tkiouat, M. 2017. A multi-level agent-based model of reinsurance. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 746– 752.

Abstract:

Advances in agent-based modeling continue to offer new tools and concepts to model and study phenomena involving more complexity. In particular, economic and social issues with different levels of interactions and representations can benefit from frameworks of multi-level agent-based modeling that have successfully simulated other problems sharing similar properties. We show through our work how reinsurance fits into this category of complex multi-level problems, how we adapted recent concepts with recent tools to go through the modeling obstacles of this issue to come up with a model that confirms the results of other renowned works and surpasses them in terms of analysis depth and assumptions flexibility.

Keywords: reinsurance; agent-based modeling; power and shubik law; multi-level; computational economics

JEL Classification: C63; C92; G2

Introduction

Agent-based modeling is an approach where computer experiments are conducted by defining basic behavior of agents to understand the dynamics of a resulting complex phenomena where computational mathematical decomposition shows its limitations or can't explain empirical reality. Multi-level modeling addresses the issue when interactions of agents occur in different levels that influence each other but also where entities have interactions zones that make each level look as a separate model, such as cells versus tissues in biology or producers/consumers versus economic sectors (Camus, Bourjot, Chevrier 2013, 15–22).

Research in multi-level agent-based modeling solves the technical and theoretical difficulties arising when trying to include all those interactions in one model, but also offers abstraction layers and domain-specific frameworks for the particular difficulties in some phenomena where either the number of agents are too big or have complex aggregated interactions.

Indeed, we can consider reinsurance one of such problems. The insuring relationship between customer and insurer reappears repetitively between insurer and reinsurer then reinsurer of reinsurer thus defining a hierarchy which where elements play different simultaneous roles that makes a direct definition of agents actions too complex. This kind of complexity with the adaptive nature of the agents makes reinsurance an appropriate application case calling for both agent-based modeling and multi-level concepts.

While there are many models in the literature that study different insurance problems from optimal prices to market cycles and stability (Hjorth, Brady, Head, Wilensky 2016, 282-289) no similar experimental approach has been undertaken to explore the dynamics of reinsurance, which is also a starting point of our study.

In section 2, we review the theoretical background and literature related to our subject, then in section 3 we describe our model and approach in detail to finally analyze and discuss the findings in section 4.

Conclusion

We consider our model to be an important application of multi-level agent-based modeling and a new framework for the study of reinsurance. We demonstrated how a recursive definition and a synchronization using multi-level frameworks makes the experimental study of complex reinsurance configurations possible, and allows more flexibility in hypotheses to filter the unnecessary ones from the computational model of reference. The model is also an experimental proof of Power and Shubik law and we showed new dynamics of the law in our analysis. Further work can calibrate the model on an existing reinsurance market specially to have more realistic price adjusting procedures. Other laws between probability loss and optimal number of levels can be explored using data science techniques. For this purpose, the model must benefit from research in large scale modeling to be able to execute with higher numbers of levels.

References

- [1] Camus, B., Bourjot, C., Chevrier, V. 2013. Multi-level modeling as a society of interacting models. *Spring Simulation Multi-Conferences, Agent-Directed Simulation Symposium*, 1: 15–22. Available at: <http://dx.doi.org/10.1007/s10588-012-9119-9>
- [2] Hjorth, A., Brady, C., Head, B., Wilensky, U. 2016. *Turtles all the way down: Presenting levelspace, a netlogo extension for reasoning about complex connectedness*. Constructionism in Action, Conference Proceedings (Dra), Published by Suksapattana Foundation 126 Prachauthit Road, Bangmod, Thung Kru, 10140, February 1-5 Bangkok, Thailand, 282-289 pp. Available at: <https://files.learninginventions.org/Constructionism%202016%20Proceedings.pdf>
- [3] Huraux, T., Sabouret, N., Haradji, Y. 2014. *A multi-level model for multi-agent based simulation*. Proc. of 6th International Conference on Agents and Artificial Intelligence (ICAART). Available at: <http://dx.doi.org/10.5220/0004814501390146>
- [4] Quijano, J.G., Louail, T., Hutzler, V. 2012. From biological to urban cells: Lessons from three multilevel agent-based models. *Principles and Practice of Multi-Agent Systems*, LNCS, 7057: 620–635, Springer. Available at: http://dx.doi.org/10.1007/978-3-642-25920-3_45
- [5] Plantin, G. 2006. Does reinsurance need reinsurers? *Journal of Risk and Insurance*, 73(1): 153-168. Available at: <http://dx.doi.org/10.1111/j.1539-6975.2006.00169.x>
- [6] Powers, M.R., Shubik, M. 2001. Toward a Theory of Reinsurance and Retrocession. *Insurance: Mathematics and Economics*, 29(2): 271-290. Available at: [http://dx.doi.org/10.1016/S0167-6687\(01\)00087-7](http://dx.doi.org/10.1016/S0167-6687(01)00087-7)
- [7] Powers, M.R., Shubik, M. 2005. A Note on a “Square-Root Rule” for Reinsurance. Cowles Foundation Discussion Paper no. 1521, from Cowles Foundation for Research in Economics, Yale University, *Revista de Contabilidade e Finanças (Review of Accounting and Finance)*, 17(5): 101-107. Available at: <http://cowles.yale.edu/sites/default/files/files/pub/d15/d1521.pdf>
- [8] Zhou, F. 2013. *Application of Agent Based Modeling to Insurance Cycles*. (Doctoral thesis, City University London). Available at: <http://openaccess.city.ac.uk/12195/1/Application%20of%20Agent%20Based%20Modeling%20to%20Insurance%20Cycles.pdf>

Mathematical Models of Uncertainty in Economics

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Suggested Citation:

Guseva, V.E., Ungureanu, L., KUZMIN, E.A. 2017. Mathematical Models of Uncertainty in Economics. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 753– 765.

Abstract:

The article reviews various types of mathematical models for uncertainty in economics. For each model, applications and application features are given. Causes for uncertainty appearance in business processes have been made specific. In the summary of theorizes, uncertainty models are analysed. In the research, an attempt is made to find out possible logical and structural regularities able to improve an approach to construction of mathematical models for uncertainty. Comparative characteristics of managerial decision-making criteria have been made specific in case of total or partial uncertainty.

Keywords: uncertainty; mathematical models; decision-making criteria.

JEL Classification: D80; D81

Introduction

Uncertainty as a condition of an open stochastic system is a principle to develop ideas about risks and their impact on business objects. Universality of this phenomenon gives rise to a variety of scientific problems related to a search for a nature of structural changes and cause-and-effect relationships within the generation cascade of risks. That is why the most important issue is a review of management methods in terms of uncertainty.

In all economic sectors, there is a need in more accurate mathematical models of decision-making. Known approaches suggest several available parameters or probabilistic characteristics of events, phenomena or processes. Implementing models, we consider probability parameters close to the indicators which have been already known, which is actually false. Blyth (2012), Borch (1968), Traub *et al.* (1988), and Jaeger *et al.* (2001) mentioned complexity in a search for alternative solutions and criteria for uncertainty assessment.

Obviously, systems operate in terms of uncertainty caused by factors of a different nature. An approximate consideration for these factors is possible by making mathematical models. Recent scientific papers have given an insufficiently detailed description and a review of mathematical models of uncertainty. This fact points out to a need in more research.

Conclusion

In terms of the multidimensional nature of uncertainty as a category, a close definition of a number of funded features, properties, and characteristics of available uncertainties in economics is of critical importance. In this regard, the authors have reviewed the category to define basics of uncertainty. In the survey, they have examined mathematical models of uncertainty in economics, given their comparative typological characteristics, as well as discussed criteria for management decision-making and conditions under which any criterion gives the best effect.

References

- [1] Aleksandrov, A.G. 1989. *Optimal and Adaptive Systems*, Vysshaya Shkola, Moscow.
- [2] Andrievskiy, B.R., and Fradkov, A.L. 2000. *Selected Chapters from Automatic Control Theory*. St. Petersburg: Nauka.
- [3] Avdiysky, V.I., and Bezdenezhnykh, V.M. 2011. Uncertainty, variability and inconsistency in analysis risk tasks related to behaviour of economic systems. *Effective Crisis Management*, 3(66): 46-61.
- [4] Bessonov, L.V., and Rozen, V.V. 2013. *Mathematical Models of Decision-making in Economics*. Norma.
- [5] Blyth, C. 2012. Some probability paradoxes in choice from among random alternatives. *J. Amer. Stat. Assoc.*, 67(338): 366-373.
- [6] Borch, K.H. 1968. *The economics of Uncertainty*. Princeton University Press, ISBN-10: 0691041245 ISBN-13: 9780691041247, 227 pp.
- [7] Dyda, A.A. 2006. *Adaptive and Neural Network Control over Elaborated Dynamic Objects*. Dal'nauka.
- [8] Gelig, A.H. 1996. Robust stability of nonlinear impulsive systems. *Automation and Remote Control*, 12: 78-83.
- [9] Hovanov, N.V., and Fedotov, Yu.V. 2006. *Models to Account Uncertainty in Making Consolidated Performance Indicators of Activities in Complex Industrial Systems*. Scientific Reports No. 28 (R). St. Petersburg Research Institute of Management.
- [10] Jaeger, C.C., Webler, T., Rosa, E.A., and Renn, O. 2001. *Risk, Uncertainty, and Rational Action*. Routledge, ISBN 10: 1853837709, 320 pp.
- [11] Knight, F.H. 1921. *Risk, Uncertainty and Profit*. Hart, Schaffner & Marx, Available at: https://mises.org/sites/default/files/Risk,%20Uncertainty,%20and%20Profit_4.pdf
- [12] Ksenofontova, M.V. 2012. Management problems for objects with structural and parametric uncertainty. *Bulletin of the Maritime State University*, 51: 185-186.
- [13] Kuzmin, E.A. 2012. Uncertainty in economics: concepts and provisions. *Journal Manager*, 2(2): 80-92.
- [14] Kuzmin, E.A. 2016. Theoretical model to estimate system uncertainty in economics. *Information*, 19(7A): 2577-2588.
- [15] Matei V., Ungureanu L. 2014. Survey on integrated modelling applied in environmental engineering and management. *Environmental Engineering and Management Journal*, 13 (4): 1027-1038.
- [16] Miles, R.E., and Snow, C.C. 1978. *Organizational Strategy, Structure, and Process*. McGraw-Hill, 195 pp.
- [17] Nadezhdin, E.N., and Bushuyev, V.D. 2011. *Simulation Methods in Objectives to Investigate Organizational Management Systems: Monograph*. Institute of Economics and Management.
- [18] Popescu I., Ungureanu L., Muscalu E. 2005. *Anti-entropic decision-making or action from cause to effect*. Publishing of "Lucian Blaga" University of Sibiu (in Romanian).
- [19] Priem, R.L., Love, L.G., and Shaffer, M.A. 2002. Executive's perception of uncertainty sources: a numerical taxonomy and underlying dimensions. *Journal of Management*, 28(6): 725-746.

- [20] Purcaru I., Berbec F., Sorin D. 1996. Financial Mathematics & Business Decisions. *Economic Publishing House*, Bucharest (in Romanian)
- [21] Shannon, C.E. 1948. A mathematical theory of communication. *The Bell System Technical Journal*, 27(3): 379-423.
- [22] Traub, J., Vasilkovsky, G., and Vozhnyakovsky, H. 1988. *Information, Uncertainty, Complexity*. Mir.
- [23] Ungureanu L. 2011. Dynamical Systems in Managerial Decision Making. *Journal of Advanced Research in Management*, Volume II, 1(3): 20-27.
- [24] Zaraté, P. 2008. *Collaborative Decision Making: Perspectives and Challenges*. IOS Press, ISBN: 978-1-58603-881-6, 516 pp.
- [25] Zyipkin, Y.Z., and Polyak, B.T. 1990. Frequency criteria for the robust modality of the linear discrete. *Avtomation*, 5: 4-11.
- [26] Zyipkin, Ya. Z. 1992. Robust stability of nonlinear discrete systems with parametric uncertainty. *Avtomation*, 4: 3-9.

Efficiency of Applying Risks Management Systems at Industrial Enterprises under Market Conditions

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Suggested Citation:

Avilova, T.V., Voytolovskiy, N.V., Dikareva, V.A., Chernysheva, A.M. 2017. Efficiency of applying risks management systems at industrial enterprises under market conditions. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 766–771.

Abstract:

Under the modern conditions the risks analysis and management at enterprises are of great importance for taking and implementing management decisions. Today it is possible to say that this area in the management science has been formed and is successfully being developed both in theoretic and applied aspects. Nevertheless, under the modern economic conditions it has not only not lost but even strengthened its urgency. This article is devoted to issues related to the efficiency of risk management under the modern conditions, and methods of increasing its efficiency. The authors position a system of risks management in the matrix form as a principle model of risk management at the enterprise. They single out various “risk zones” according to the degree of their acceptability for the enterprise. Herewith, the task of management is to lead the enterprise from the unacceptable risk zone to the zone of the low and most acceptable risk with the minimum losses.

Key words: risk management; enterprise; economic efficiency; optimization task

JEL Classification: D81; O10

Introduction

The modern economic situation can be characterized as highly risky for enterprises of various areas. Along with particularly urgent political risks, risk of a fall of demand for the manufactured products (services), slowing or complete lack of the economic growth (increase) of the market supply, inflation risks and risks of currency rates fluctuations, etc. increase. All risks must be obligatorily taken into account during situational and forecasting economic and financial calculations, when planning and taking measures within the policy of the production and financial management of the enterprise. In the context of the difficult market situation it is more and more difficult for the management to forecast, quantitatively measure, manage and foresee risks compensation when performing the production activity.

Issues related to defining, classifying, and quantitative measuring of risks always held key positions in the economic science due to the fact that the risk is above all a probability of any event in the future as it is defined in

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the classical work of Knight (2003). The risk as a whole and its role in the everyday activity has been studied for long both by national (Algin 1989, Granaturiv 2002) and foreign researchers (Barton, Shenkir and Walker 2003, Jorion 1997, Dowd, Braleye, Mayers, Van Horn, Krushviz *et al.* 1998). Such researchers as Karlik and Diatlov (2013) paid their attention to peculiarities of Russian enterprises functioning and managing in the context of unstable external environment. Works of Demidenko *et al.* (2010, 2015), Osipov (2009) are devoted to principles of the enterprise growth “under the fall conditions”.

Conclusions

Generalizing the provisions that characterize the state of modern risk management systems used by enterprises, it is possible to state that, if correctly applied, “the risks matrix” that allows to position the enterprise in the system of coordinates of discrete variables (in the case under consideration this is a degree of losses from the risk and probability or size of the risk) can be an efficient tool to manage risks. Herewith, it is possible to single out zones of risk according to the degree of its acceptability for the enterprise because the task of management is to improve the position of the enterprise, transfer it from the zone of a less acceptable risk to the zone of a more acceptable risk (for example, from the zone of high risk to the zone of medium or low risk). Being in a specific position in the system of coordinates under consideration, the enterprise suffers losses from risks. Moving within the system of coordinates “from the worse to better” causes “expenses related to changing the positioning”. Correlating changes of losses with expenses related to the positioning change allows to estimate the efficiency of managing a risk of a specific enterprise and to compare the efficiency of enterprises management. However, herewith, it is necessary to define the criteria of efficiency that are not currently defined.

References

- [1] Algin, A.P. 1989. *Risk i ego rol v obschestvennoy zhizni* [Risk and Its Role in Social Life]. Moscow: Think, 188 pp.
- [2] Barton, T.L., Shenkir W.G., Walker, P.L. 2003. *Kompleksnyi podhod k risk-menedzhmentu* [Comprehensive Approach to Risk Management]. Moscow: Williams, 208 pp.
- [3] Bellman, R.E., Dreyfus, S.E. 2015. *Applied Dynamic Programming*. Princeton: Princeton University Press, 390 pp.
- [4] Demidenko, D.S., Malevskaya-Malevich, E.D. Osipenko, A.S. 2015. Osobennosti optimalnykh planov rasshireniya proizvodstva na predpriyatii [Peculiarities of Optimal Plans of Extending Production at the Enterprise]. *Economic Renaissance of Russia*, 2: 111-115.
- [5] Demidenko, D.S., Dubolazova Yu.A., Malevskaya-Malevich, E.D. 2010. Razrabotka modeley mekhanizma optimalnogo upravleniya riskami organizatsii [Development of Models of the Mechanism Related to Optimal Managing the Organization Risks]. *Scientific and Technical Bulletin of the State Polytechnic University (Economic Sciences)*, 4: 102.
- [6] Diatlov, S.A., Karlik, A.E. 2013. Transformatsiya ekonomicheskikh sistem v usloviyakh globalnoy innovatsionnoy giperkonkurentsii [Transformation of Economic Systems under Conditions of the Global Innovational Hyper-Competition]. *Partnership of Civilizations*, 3: 142-160.
- [7] Dowd, K. 1998. *Beyond Value at Risk: The new Science of Risk Management*. New York: John Wiley & Sons, 286 pp.
- [8] Granaturov, V.M. 2002. *Ekonomicheskiy risk: suschnost, metody izmereniya, puti snizheniya* [Economic Risk: Essence, Methods of Measuring, Ways to Decrease]. Moscow: Business and Service, 160 pp.
- [9] Jorion, P. 2006. *Value at Risk*. 3rd Edition, The New Benchmark for Managing Financial Risk. New York: McGraw-Hill, 624 pp.
- [10] Karlik, A.E. Osipov, M.A. 2009. Sostoyanie i perspektivy makroekonomicheskogo razvitiya Rossii v kontekste teorii ekonomicheskogo rosta s uchetom krizisnykh yavleniy [State and Perspectives of the Macro-economic development of Russia in the Context of the Economic Growth Theory Taking into Account Crisis Phenomena]. *Economic Sciences*, 8: 12-18.
- [11] Knight, F.Ch. 2003. *Risk, neopredelennost i pribyl* [Risk, Indefiniteness and Income]. Moscow: Delo Publ., 360 pp.

- [12] Pavlenko, A.V., Kovaleva, E.G., Radoutskiy, V.Yu. 2015. Analiz podhodov k otsenke riska [Analysis of Approaches to Estimating Risk]. *Bulletin of the Shukhov State Technological University*, 3: 106-109.
- [13] Strizhakova, E.N., Strizhakov, D.V. 2006. Vnedrenie integrirovannogo upravleniya riskami na promyshlennom predpriyatii [Implementing Integrated Risks Management at the Industrial Enterprise]. *Management in Russia and Abroad*, 3: 112-117.

The Role of Net Export on Economic Growth in United States of America

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Suggested Citation:

Akalpler, E., Shamadeen, B. 2017. The role of net export on economic growth in United States of America. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 772– 781.

Abstract:

The study analyses the role of net exports on economic growth in the United States of America (USA). This was necessitated by the resounding economic resilience that has been experienced by the USA and assertions have pointed to net exports but have also attracted different assertions from other studies. As such the study sought to analyze the role of net exports on economic growth with regards to the USA. The study was conducted using secondary data collected from the 1970: Q1 – 2015: Q1 and was analyzed using a Vector Error Correction Model (VECM). The results from the study showed that there is a long run co-integration between net exports and economic growth in USA. Import levels and unemployment were observed to be negatively related to economic growth.

Keywords: economic growth; net exports; gross domestic product; imports; unemployment

JEL Classification: C51; F10

Introduction

The economic growth rate of USA registered a level of -0.92% in December 2008, 3.88% in December 2014 and 2.93% in December 2015 estimates by Bureau of Economic Analysis (2015) revealed that the 1.5% increase in economic growth in the third quarter of 2015 was as a result of positive contributions from non-residential fixed, residential fixed investments, personal consumption expenditure, state and local government spending. During the same period, the Bureau of Economic Analysis (2015) revealed exports had decelerated in the third quarter of 2015. Such a decline in exports is assumed to have not played a part to the increase in GDP.

On the other hand, various studies have been undertaken to determine what drives economic growth. A study done by Sun (1998) revealed that foreign direct investment (FDI) has a positive contribution to economic growth. On the contrary, Aslanoglou (2002) used time series data from the period 1975 to 19995 to examine the impact of foreign direct investment economic growth in Turkey. The results from the study showed that foreign direct investment has an insignificant positive contribution to economic growth.

Fischer (1993) undertook a study to examine the determinants of economic growth. This study was based on a panel of nine developing countries. The results showed that there is non-linear relationship between inflation and economic growth at break points of 15% and 40% in spline regression. Studies on the role of net exports on economic growth are still underway as they try to establish what exactly drives economic growth.

Conclusion

It can be concluded that there is a positive relationship that exists between exports and economic growth in the USA and such a relationship is being contributed by the positive influence of gross fixed capital formation. However, unemployment and import levels are standing as hindrances to economic growth.

Recommendations

The USA government is advised to increase investment or expenditure towards gross fixed capital formation. Such an increase will translate to improved infrastructure which is also a necessity for economic growth and development.

Measures can also be put in place to further increase export levels. This can be done through the use of export incentives and subsidies. Trade arrangements can also be made to eliminate trade barriers. This may also be reinforced by bilateral and multilateral trade agreements.

There is need to curb the negative impact that is being posed by imports. The negative association between imports and economic growth can be as a result of the effects of inflation. Therefore, efforts must ensure that imports must not stimulate inflationary pressure. This may be done by heavily taxing consumer goods and providing incentives for the import of producer goods.

Many funds must be injected towards financing domestic production so as to boost the employment of both factors of production which include labor. Taxes on personal income and corporate income must not be so high to an extent that they discourage investment and people from seeking employment. Measures can also be adopted that promote FDI inflows especially in productive sectors of the economy.

Suggestions for Future Research. Model stability tests and other tests results have shown that this study provides good estimates of the relationship between exports and economic growth in the USA. However, future studies can incorporate the impact of inflation on growth and can encompass variables such as money supply and exchange rate.

Reference

- [1] Abedian, I., Standish, B. 1992. *The South African Economy: A Historical Overview*, in Abedian I., Standish B. (eds) *Economic Growth in South Africa: Selected Policy Issues*. Cape Town: Oxford University Press
- [2] Abou-Stait F. 2005. *Are Exports the Engine of Economic Growth? An Application of Cointegration and Causality Analysis for Egypt, 1977-2003*. Economic Research WP No: 76.
- [3] Abu Al- F.B. 2004. Testing the export-led growth hypothesis: Evidence from Jordan, *Applied Economics Letters*, 11: 393-396.
- [4] Ahdi, N., Goodness, C., Mehmet, B., Rangan, G. 2013. *Causality between Exports and Economic Growth in South Africa: Evidence from Linear and Nonlinear Tests*, Working Papers 201339, University of Pretoria, Department of Economics.
- [5] Aslanoglou, P. 2002. *Policy Regimes and industrial Competitiveness: A Comparative of South Asia and India*. Indira Gandhi Institute of Development, India.
- [6] Awokuse T.O. 2003. Is the Export Led Growth Hypothesis Valid for Canada? *The Canadian Journal of Economics/Revue Canadienne d'Economie* 36(1): 126-136. Available at: <http://faculty.smu.edu/millimet/classes/eco6375/papers/awokuse%202003.pdf>
- [7] Breusch, T.S. 1978. Testing for Autocorrelation in Dynamic Linear Models. *Australian Economic Papers*. 17: 334–355. DOI:10.1111/j.1467-8454.1978.tb00635.x
- [8] Cypher, J.M., Dietz, J.L. 2004. *The Process of Economic Development*, Routledge. Available at: http://www.palermo.edu/Archivos_content/2015/derecho/pobreza_multidimensional/bibliografia/Biblio_adic1.pdf
- [9] Darrat, A. F. 1987. Are On Export an Engine for Growth: Another Look at the Evidence? *Applied Economics*, 19: 277-283.

- [10] Dickey, D.A., Fuller W.A. 1979, Distribution of the Estimators for Autoregressive Time Series with a Unit Root. *Journal of the American Statistical Association*, 74: 427-431.
- [11] Diks, C.G.H., Panchenko, V. 2005. A note on the Hiemstra-Jones test for Granger non-causality. *Nonlinear Dynamics & Econometrics*, 9 (2), Article 4. Available at: http://research.economics.unsw.edu.au/vpanchenko/papers/2005_GC_SNDE.pdf
- [12] Fischer, S. 1993. The Role of Macroeconomic factors in Growth. *Journal of Monetary Economics*, 32 (3): 485-492.
- [13] Godfrey, L.G. 1978. Testing Against General Autoregressive and Moving Average Error Models when the Regressors Include Lagged Dependent Variables. *Econometrica*, 46: 1293–1301.
- [14] Habees, M.A., Rumman, A.M. 2012. The Relationship Between Unemployment and Economic Growth in Jordan and Some Arab Countries. *World Applied Sciences Journal*, 185: 673-680, Available at: http://www.wiiw.ac.at/pdf/crespo_woerz_etsg_2003.pdf
- [15] Kalaitizi, A. 2013. *Exports and Economic Growth in the United Arab Emirates*. Submitted to: RIBM Doctoral Symposium. Manchester Metropolitan University Business School.
- [16] Kim D.H., Lin, S.C. 2009. Trade and Growth at Different Stages of Economic Development. *Journal of Development Studies*, 45(8): 1211–1224.
- [17] Lee, C., Huang, B.N. 2002. The Relationship Between Exports and Economic Growth in East Asian Countries: A Multivariate Autoregressive Approach. *Journal of Economic Development*, 27(2): 45-68. Available at: <http://www.jed.or.kr/full-text/27-2/lee.PDF>
- [18] McConnell, M.M., Mosser, P.C., Perez Quiros, G. 1999. A Decomposition of the Increased Stability of GDP Growth. *Economics and Finance*, 5(13): 1-6. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.39.1154&rep=rep1&type=pdf>
- [19] Ohlin, B. 1967. *Interregional and International Trade*. Harvard Economic Studies. 39. Cambridge, MA: Harvard University Press, ISBN - 10: 0674460006, ISBN-13: 9780674460003.
- [20] Pavelescu, M.F. 2007. *Assessments of the Readiness of Romanian Companies to Integrate into the EU*. Expert Publishing House. Available at: <http://iecs.ulbsibiu.ro/IECS2010/section1/Bucur%20I,%20Done%20I,%20Bucur%20C.pdf>
- [21] Perron, P. 1988. Testing for a Unit Root in Time Series Regression. *Biometrika*, 75(2): 335–346. DOI:10.1093/biomet/75.2.335
- [22] Ram, R. 1985. Exports and Economic Growth: Some Additional Evidence. *Economic Development and Cultural Change*, 33(2): 415-25.
- [23] Srinivasan, T.N., Bhagwati, J. 2001. *Trade and Poverty in the Poor Countries*. Studies in Nonlinear Dynamics and Econometrics, *forthcoming*. Available at: http://www.econ.yale.edu/~srinivas/trade_poverty.pdf
- [24] Smith, A. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*, W Strathan W, and Cadell T., London, Volume 1. Available at: <http://eet.pixel-online.org/files/etranslation/original/The%20Wealth%20of%20Nations.pdf>
- [25] Sun, H. 1998. Macroeconomic Impact of Direct Foreign Investment in China: 1979-96. *The World Economy*, 21 (5): 675-94.
- [26] Wörz, J., Crespo-Cuaresma, J. 2003. *On Export Composition and Growth*, University of Vienna, Department of Economics, Vienna, Austria; and Vienna Institute for International Economic Studies (WIIW), Vienna, Austria. Available at: http://www.wiiw.ac.at/pdf/crespo_woerz_etsg_2003.pdf.cxz

The Concept of Evaluation of Cluster Development Strategic Outlooks with the Use of Multiples

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Suggested Citation:

Kuznetsov, V., Egorova, A., Yashin, S., Koshelev, E., Garina, E. 2017. The concept of evaluation of cluster development strategic outlooks with the use of multiples. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 782– 788.

Abstract:

This paper suggests an approach making it possible to recognize a core company of a future innovational and industrial cluster in order to subsequently expand this type of business up to a pilot cluster of the region. For that end, it is proposed to use book value multiples, Tobin's Q multiple and revenue multiples. They allow determining whether the company in question will be able to become a core of a potential cluster in the very near future. The multiples can also help verify whether a large company meets its current position of the 'cluster core'. With this end in view, its book value multiple is compared with the profitability spread, and the revenue multiples are compared with the profit margin.

Keywords: cluster; the cluster core; the book value of the multiplier; multiplier of revenue; the company's brand value

JEL Classification: D20; D23; D24

Introduction

In the context of economic globalization, present-day globally accepted methods for economic management of countries and their regions become more and more relevant. Russia's continuing integration into the world economy charges both the Government and companies with new tasks, which are aimed to improve the country's compliance with the world's advanced technologies, including in management of the economy and finance. For instance, applying IFRS standards in financial statements of public companies has become a prerequisite of their recognition in the market and their future development.

Clusters are also of paramount importance in such globalization process (Porter 1998, Tukkel *et al.* 2013). Despite their great variety in the economy, this paper emphasizes regional innovational and industrial clusters. Such variety of rules and methods of economic management by regional companies, and most importantly, a variety of methods of interaction between companies result in formation and successful development of informal groups of companies. Such companies may operate in the same industry and in related industries. But the reality of the 21st century is such that clusters indirectly regulated by the government are the most efficient structures in

economic and social terms. This makes even stronger the well-known synergistic effect that is common to clusters themselves (Porter 1998, Tukkel *et al.* 2013).

In this connection, present-day advanced methods of cluster development management are of special relevance. In spite of a great abundance of books on management, where general principles of origination and evolution of clusters are described (Porter 1998, Gromyko 2007, Shvetsov 2014, Egorova 2014, Patrusheva and Bolshakova 2015), this paper pays attention to somewhat different issues. Namely, we have studied already existing and attempted to create our own cluster efficient development management model.

Conclusions

Although there are a great number of standard cluster management models, the processes of cluster appearance and evolution are not yet studied in sufficient detail. The models required for this must adequately describe organizational issues and market mechanisms for their implementation using the relevant mathematical tools for that purpose. Furthermore, one cannot but take into consideration the fact that even in the presence of efficient interaction between three key agent types: scientists, government officials and businessmen, it is required to orient a future pilot cluster and its potential further development to brand appreciation of such cluster, which is actually composed of brands of companies constituting its core.

The results attained in the article may be useful to scientists, postgraduates, students, analysts and businessmen so as to create their own view on managing the processes of creating and developing clusters using, among other things, our model.

References

- [1] Bergman, E.M., and Feser, E.J. 1999. *Industrial and Regional Clusters: Concepts and Comparative Applications*. Morganton, WV: Regional Research Institute, West Virginia University. Available at: <http://works.bepress.com/edwardfeser/2/>
- [2] Bogomolov, V.A., and Surina, A.V. 2011. Using of model in knowledge distribution assesment. *Computer Science. Telecommunication and Control Systems*, 2: 195-199.
- [3] Egorova A.O., Kuznetsov V.P., Andryashina N.S. 2016. Methodology of formation and realization of competitive strategy of machine building enterprises. *European Research Studies Journal*, Special Issue, 19 (2): 125-134.
- [4] Egorova A.O., Vershinina M.V., Zokirova N.K. 2015. *Experience in strategic development and nuclear power engineering enterprises* (by the example of JSC «ATOMENERGOMASH), Bulletin of the University of Mininskogo. № 3. Available at: <http://vestnik.mininuniver.ru/reader/archive/?year=2015&issue=3>
- [5] Fedorenko, O.S. 2010. Stepping up of investment activities on the basis of cluster approach. *Economic Systems Management: Electronic Journal* 4 (24): Available at: <http://uecs.ru/innovacii-investicii/item/237-2011-03-24-12-20-16>.
- [6] Fernandez, P. 2015a. *Valuation of brands and intellectual Capital*. Social Science Research Network, Available at: <http://ssrn.com/abstract=270688>.
- [7] Garina E.P., Kuznetsov V.P., Egorova A.O., Garin A.P., Yashin S.N. 2016. Formation of the system of business processes at machine building enterprises. *European Research Studies Journal*. Special Issue V, 19(2): 55-63.
- [8] Limitovskiy, M.A. 2011. *Investment Projects and real Options in Developing Markets: Teaching and Practical Aid*. Moscow: Urait Publishing House.
- [9] Patrusheva, E.G., and Bolshakova, E.A. 2015. Evaluating of economic efficiency of the regional innovative cluster. *Economic Systems Management: Electronic Journal* 4 (76): Available at: <http://uecs.ru/regionalnaya-ekonomika/item/3443-2015-04-15-13-20-03>.
- [10] Prosvetov, G.I. 2012. *Mathematical Methods and Models in Economy: Problems and Solutions: Teaching and Practical Aid*. Moscow: Alpha-Press.
- [11] Tukkel, I.L., Golubev, S.A., Surina, A.V. and Tsvetkova, N.A. 2013. *Methods and Tools for Managing Innovative Development of Industrial Facilities*. St.-Petersburg: BHV-Petersburg.
- [12] Yashin, S.N., Koshelev, E.V., and Makarov, S.A. 2012. *Performance Analysis of Innovative Activities: Teaching Aid*. St.-Petersburg: BHV-Petersburg.

The Oil Price Volatility and the Future of Saudi Arabian Service Sector: An Empirical Analysis

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Algaeed, A.H. 2017. The oil price volatility and the future of Saudi Arabian service sector: An empirical analysis. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 789 – 807.

Abstract:

The purpose of this paper is to tackle theoretically and empirically the effects of non-linear oil price changes on Saudi Arabian service (non-traded) sector for the period of 1970 till 2015, using structural vector autoregressive (SVAR) approach. As part of the Dutch disease literature, the non-traded goods sector (service) is considered, and the impacts of oil price variations (increase and decrease) on this sector are investigated. Johansen's testing procedure results assert the existence of stable long-run relationship between real service sectors (RS), oil price increase and decrease, real government expenditure (GOEX), real exchange rate (REX), and the mining sector (MINING). The findings confirm that OILPI, REX, spending effect GOEX, and MINING influence RS positively, while oil price decrease affects RS negatively, and the signs as expected a priori. Given, the obtained tests' results, the exchange rate REX appreciation and the spending effects confirm the existence of the Dutch disease, and consistent with the Dutch disease literature and findings. The service sector benefits much during periods of oil booms.

Keywords: Dutch Disease; Saudi Arabia; a non-linear oil price shocks; SVAR.

JEL Classification: C22; F41; Q43

Introduction

The economies which depend on resource rents are likely to face severe decline in their income resulting from the sharp decline in the prices of crude oil. However, the exploitation of mineral discoveries through exports has an effect on the balance of payments of these lucky countries. Not recently, the discovery of oil and natural gas in Netherlands gave a boost to the Dutch currency, the Dutch guilder. As a consequence, the guilder became a highly sought currency. The value of the guilder appreciated relative to other currencies causing the price of Dutch exports in the currencies of the exporting countries to rise. Hence, the Dutch exports of manufacturing products felt down. This is called "de-industrialization". Some economists argue that the oil and natural resources are not only the causes of the Dutch disease, but that discovery of gold in Australia in the eighteenth century and the flow of goods to Spain in the sixteenth century from American colonies are other examples of the Dutch disease (Corden 1984). While raw materials revenues are considered a blessing, in fact they pose a real threat to traditional exports, and the import competing industries. Furthermore, this recent growth in mining such as oil and natural gas has led many economists to analyze the impacts of a booming industry on the domestic economy. Economists agree that there is a relative increase in the output of the non-mining traded sector (service) relative to the traded goods sector. Thus, the output of the traded sectors will shrink relatively (Neary and Corden 1982). Under fixed exchange rate, either high prices or production of raw materials (such as oil) will cause the domestic spending to go up. As a consequence, the short-run response to higher demand of goods and services will not be large, causing the prices of non-traded goods to go up. The service sector can afford to pay higher wages relative to the traded sector (because of high profitability) boosting the nominal wage in that sector. Hence, resources will move to the non-traded goods sector, reducing the output in the traditional sectors, agricultural and manufacturing sectors.

Not recently, Fardmanesh (1991) presented an interesting analysis using three-sector reduced form model. The incorporation of Dutch disease models of five oil producing countries proved that oil revenue and the "world-price effect" influenced positively manufacturing sectors and agricultural sector negatively. However, the findings

were not clear for the service sector. This study, however, excluded Saudi Arabia, among other countries, and he justified the exclusion on the grounds that the agriculture and the manufacturing sectors are small and not significant in terms of value. Not only the natural resources such as oil and gas cause negative effects on the traded sectors, but also other influxes could be a curse. Coffee boom is considered among different resources that cause the Dutch disease in Colombia, Kamas (1987). The rise in coffee prices in the late 1970s in Colombia brought a boom in the coffee sector at the expense of manufacturing and as a result of that, resources were reallocated into the agricultural sector. Moreover, Taguchi and Lama (2016), Eromenko (2016), and Acosta *et al.* (2007) study immigrant's remittances as a cause of the Dutch disease. Fielding and Gibson (2012), Lar, Taguchi and Sakurai (2016), Magud and Sosa (2010) investigated the relationship between Dutch disease and foreign aid, whereas Javaid (2011) concentrated on the effects of foreign currency inflows on the economic sectors.

It is worthwhile to mention that the earnings from oil booms have benefited and structured the Saudi economy. In fact, the benefits of oil revenues flourished through major sectors of the economy and participated in the transformation of the economy from a somewhat primitive to a well stand economy, which considered nowadays among other emerging economies. The changes in relative prices (P^N/P^T) induce a reallocation of production factors from traded sectors in favor of non-traded sectors (resource movement effects). The increase in non-traded goods (spending effects) causes an appreciation of the exchange rate. The relative price and the spending effects (proxied by real government spending) have influenced the service sector in Saudi Arabia. Although there is no consensus among economists concerning the empirical evidence of a resource curse, the impacts is somewhat mixed. The association between resource abundance and economic growth is not conclusive. Some economists found a positive relationship; while others found it negative (Trevion 2011). Hence, the existence evidence of the Dutch disease is a matter of empirical investigation case-by-case, in order to reach final and definite conclusions.

This paper is an attempt to explore the impacts of recent fluctuations in oil prices on the service sector in an emerging oil-based economy, and explain thoroughly whether this sector is still benefiting from the oil price boost since the last decade. It is clear that any oil price shocks (from the point of view of an oil-exporting country), will influence the earnings of oil and thereby spending and resource movement effects. This study differs from other studies in the following. First, SVAR methodology is applied to test the relationship between real service sectors (RS), oil price changes (oil price increase OILPI, and oil price decrease OILPD), government expenditure (GOEX), real exchange rate (REX), and the booming sector (MINING). Secondly, this analysis is directed towards the real service sector, where oil prices volatility are channeled via REX, GOEX, and MINING, causing variations in the real service sector. Thirdly, present the evidence that Saudi Arabia economy is infected with the Dutch disease. Figure 1 shows the behavior of the variables under consideration. RS, GOEX, and MINING move in the same direction. The rise in oil revenues raises GOEX then RS. By the same token, REX moves in line with the oil mining and GOEX. Relative price is likely to conform to the GOEX variable.

The main purpose of this paper is to analyze and investigate empirically the existence of symptoms of the Dutch disease, with reference to the non-traded goods sector (RS). Utilizing structural VAR (SVAR), it is of interest to determine the effects of changes in oil prices, REX, GOEX, and MINING on RS. The organization of this paper is as follows. Section 1 an introduction. Section 2 reviews and analyzes the theoretical and empirical related literature. Section 3 develops the theoretical model, estimation and discussion of the empirical evidence and its implications, and section 4 presents the conclusion and policy suggestions.

Conclusion and Policy Recommendations

In the last few years, the oil prices have experienced sharp ups and downs in international oil market. This situation reflected heavily on the Saudi Arabian budget and on the macroeconomic variables. In light of the non-linear oil price variations, this paper has examined thoroughly the impacts of such a shock (increase and decrease) on the service sector for the period of 1975-2015. The non-linear oil price changes have been investigated using structural VAR (SVAR) model. The Johansen co-integration tests showed an existence of long-run relationships among the variables, a non-linear oil price shocks (OILPI and OILPD), GOEX, REX, MINING, and RS. However, in the short-run, the findings showed that OILPI, REX, GOEX, and MINING have positively influenced RS.

Furthermore, the results indicated that the real service sector responded positively to one standard deviation of a nonlinear positive oil price variations. The positive effect is about 25%. Based on the results obtained from equations 14, and 14a, a positive oil price shock (say 10%) causes an increase in RS by 0.008%. From the same equations, an increase in government expenditure, spending effect, (say 10%) leads to a rise in RS by 8 percent. Similarly, from the same equations, a 10% increase in REX causes an increase in RS, by 9%. On the other hand, a negative oil price change by 10% leads to a decrease in RS by about 0.002%. The effects of REX, GOEX, Mining on RS is positive indicating the influence of government expenditure and the real exchange rate on RS. The finding here is consistent with the findings in the Dutch disease literature. Facing the sharp decline in oil revenues which will definitely affects the macroeconomic variables; the Saudi authority has to think urgently in diversifying the resources of income. Nonetheless, the role of government is to strengthen the macroeconomic structure in order to mitigate the negative effects via implementing policies that encourage the development of traded goods sectors.

References

- [1] Acosta, P., Lartey, E., and Mandelman, F. 2007. Remittances and the Dutch Disease; *Federal Reserve Bank of Atlanta Working Paper* 8: 1-38.
- [2] Algaeed, A. 2017. The Effects of Non-Linear Oil Price Shocks on the Saudi Saving-Investment Behavior, *International Journal of Economics and Financial Issues*, 7(2): 155-165.
- [3] Battaile, B., Chisik, R., and Onder, H. 2014. *Services, Inequality, and the Dutch Disease*. Policy Research Working Paper; No. 6966. World Bank Group, Washington, DC. Available at: <https://openknowledge.worldbank.org/handle/10986/19359>
- [4] Corden, M. 1984. Booming Sector and Dutch Disease Economics: Survey and Consolidation. *Oxford Economic Papers* 36(3): 359-380.
- [5] Corden, M. 2012. Dutch Disease in Australia: Policy Options for A Three Speed Economy. *The Australian Economic Review*, 45(3): 290-304.
- [6] Eromenko, I. 2016. Do Remittances Cause Dutch Disease in Resource Poor Countries of Central Asia?. *Central Asia Economic Papers*, No. 18, Available at: <http://centralasiaprogram.org/wp-content/uploads/2016/01/Eco-Papers-18-January-2016.pdf>
- [7] Fardmanesh, M. 1991. Dutch Disease Economics and the Oil Syndrome: An Empirical Study. *World Development*; 19(6): 711-717.
- [8] Fielding, D., and Gibson, F. 2012. Aid and Dutch Disease in Sub-Saharan Africa. *Journal of African Economies*, 22(1): 1-21. DOI: 10.1093/jae/ejs013
- [9] Hamilton, J. D. 1996. This is What Happened to the Oil Price Macro economy Relationship. *Journal of Monetary Economics*, 38(2): 215-220.
- [10] Javaid, S. 2011. Dutch Disease Investigated: Empirical Evidence from Selected South-East Asian Economies. *Journal of Economic Cooperation and Development*, 34(4): 51-74.

- [11] Kamas, L. 1986. Dutch Disease Economics and the Colombian Export Boom. *World Development*, 4: 1177-1198.
- [12] Koitsiwe, K., and Adachi, T. 2015. Australian Mining Boom and Dutch Disease: Analysis Using VAR Method. *Procedia Economics and Finance*, 30: 401-408. Available at: [https://doi.org/10.1016/S2212-5671\(15\)01307-6](https://doi.org/10.1016/S2212-5671(15)01307-6)
- [13] Lama, R., and Medina, J. 2012. Is Exchange Rate Stabilization an Appropriate Cure for the Dutch Disease? *International Journal of Central Banking*, 5-42. Available at: <http://www.ijcb.org/journal/ijcb12q1a1.pdf>
- [14] Lar, N., Taguchi, T., and Sakurai, H. 2016. Does Foreign Aid Cause "Dutch Disease: Case of Cambodia, Lao PDR, Myanmar, and Vietnam. *Journal of Reviews on Global Economics*, 5: 180-189.
- [15] Lee, K., Ni, S., and Ratti, R. 1995. Oil Shocks and the Macroeconomy: The Role of Price Variability. *The Energy Journal*, 16(4): 39-56.
- [16] Lin, J. 2008. *Notes on Testing Causality*. Institute of Economics Academia Sinica, Department of Economics, National Chengchi University. Available at: <http://faculty.ndhu.edu.tw/~jlin/files/causality.pdf>
- [17] Lotfi, B., and Karim, M. 2016. Dutch Disease and Changes of the Productive Structure in Moroccan Economy: An Analysis Using VECM. *Advances in Management and Applied Economics*; 6(4): 25-44.
- [18] Magud, N., and Sosa, S. 2010. When and Why Worry about Real Exchange Rate Appreciation? The Missing Link between Dutch Disease and Growth. *IMF Working Paper WP/10/271*: 1-33.
- [19] Mironov, V., and Petronevich, A. 2015. *Discovering the Signs of Dutch Disease in Russia*; Bank of Finland, BOFIT Discussion Papers 3/2015. Available at: <https://www.hse.ru/mirror/pubs/lib/data/access/ram/ticket/4/149687956193bff6eed1d5cad63ed240f019e8b492/dp0315.pdf>
- [20] Mork, K. 1989. Oil Shocks and the Macro economy when Prices Go Up and Down: An Extension of Hamilton's Results. *Journal of Political Economy*, 97(4): 740-744.
- [21] Neary, P., and Corden, M. 1982. Booming Sector and De-industrialization in a Small Open Economy. *The Economic Journal*, 92: 825-848.
- [22] Oomes, N., and Ponamorenk, O. (2015). The Price of Oil Dependency: Dutch Disease in Russian Regions; *SEO-Discussion Paper*, No. 83. Available at: <http://hdl.handle.net/11245/1.514561>.
- [23] Rudd, D. 1996. *An Empirical Analysis of Dutch Disease: Developing and Developed Countries*. Economics Department Honors Projects. Illinois Wesleyan University. Available at: http://digitalcommons.iwu.edu/cgi/viewcontent.cgi?article=1064&context=econ_honproj
- [24] Taguchi, H., and Lama, B. 2016. Do Emigrant's Remittances Cause "Dutch Disease"? The Case of Nepal and Bangladesh. *Research in Applied Economics*, 8 (4):1-14. DOI:10.5296/rae.v8i4.10044
- [25] Trevino, J. 2011. Oil Price Boom and Real Exchange Rate Appreciation: Is there Dutch Disease in the CEMAC? *IMF Working paper WP/11/268*: 43-58.
- [26] Wolters, J., and Hassler, U. 2006. Unit Roots Testing. *Statistisches Arch*, 90 (43): 43-58.
- [27] Zuzana, I. 2016. The Dutch Disease: An Overview. *European Scientific Journal*, Special Edition, 95-101.

Efficiency Assessment and Development Forecast of the Institutions Stimulating the Innovative Behavior of Economic Entities in a Resource-Extraction Region

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Suggested Citation:

Islamutdinov, V.F. 2017. Efficiency assessment and development forecast of the institutions stimulating the innovative behavior of economic entities in a resource-extraction region. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 808–819.

Abstract:

The objective of the research is to assess efficiency and to forecast development of the institutions that stimulate innovative behavior of economic entities in a resource-extraction region, using the example of the Khanti-Mansi autonomous Okrug – Yugra. The assessment is done using two methods – indirect and direct. The indirect one is carried through the level of innovative intensity and demand for these institutions. The direct method is based on the results of questionnaire survey to innovative activity's participants. Indirect assessment reveals the fact that the correlation between institutions stimulating the innovative behavior and the level of innovative intensity prove to be weak and transient. Direct assessment testifies subsidies and grants to be the most effective institutions, though their effect is transient. Technology parks and tax concessions are found to be more effective, with more sustained effect. Other stimulating institutions within the Yugra region have not been proved to be effective yet. Based on efficiency assessment and revealed institutional traps, we forecast the development of the stimulating institutions, which appears to be pessimistic for the most institutions. We also suggest measures to modernize and adapt institutions stimulating the innovative behavior adjusted for impact of foreign economic factors and business environment. Academic novelty of the research lies in the fact that the author's method of assessing the transactional efficiency of institutions has been applied.

Keywords: stimulating institutions; innovative behavior; efficiency; development forecast; adaptation; modernization.

JEL Classifications: O10; C13

Introduction

Amid protracted crisis in Russia, which threatens to go into recession, institutions stimulating the innovative behavior of economic entities become important, since the innovation can become a driver of an economic slowdown. Therefore, governments of countries, that are in a recession, in any way, stimulate innovative behavior of their entrepreneurs. However, in times of crisis such measures and stimulating institutions have to be more efficient due to toughening requirements. Thus, great importance attaches to the methods and approaches for assessing their efficiency. Many authors assess the efficiency of measures to stimulate innovation activity in the Russian Federation (Kondratyeva 2009, Lamberova 2012, Nikonov 2009) and abroad (Cincera and Capron 2000, Borner, Bodmer and Kobler 2004, Ton, Rau, de Grip and Klerkx 2011), that have shown a correlation between the efficiency of stimulating institutions and the level of transaction costs.

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Conclusions

Thus, the efficiency of institutions stimulating the innovative behavior in Yugra is assessed to be insufficient. There are several institutions which show high efficiency in the short term, these are grants and subsidies. Tax concessions, industry standards and residency at technology parks have longer effect, but their effectiveness is low. For the latter we can predict neutral scenario, for the rest of institutions it is a pessimistic one. The effect of changes in foreign economic environment and market conditions is generally negative and worsens the prognosis.

An issue of the joint acting of stimulating institutions and mutual influence on their efficiency remains to be open. Further research to identify the efficiency of individual stimulating institutions, including simulation methods and BigData technology, is also needed.

Acknowledgment

The research is conducted with financial support on the part of the Russian Foundation for Humanities, project “Retrospective, specific issues and evolution forecast for economic institutions of a resource-extraction region (using the example of the Khanti-Mansi autonomous okrug - Yugra)”, grant agreement (contract) #15-12-86001/16/10/16-YSU-088 of 12 Dec. 2016 and the Department of Education of the Khanti-Mansi autonomous okrug – Yugra, a grant to implement in 2016 a scientific project #15-12-86001 “Retrospective, specific issues and evolution forecast for economic institutions of a resource-extraction region (using the example of the Khanti-Mansi autonomous okrug - Yugra)”, agreement # 07/16.0244-10/16-YSU-171 of 03 Aug. 2016.

References

- [1] Borner, S., Bodmer, F. and Kobler, M. 2004. *Institutional Efficiency and its Determinants*. The Role of Political Factors in Economic Growth. Paris: Development Centre of the Organisation for Economic Co-Operation and Development, 104 pp.
- [2] Cincera, M. and Capron, H. 2000. *Assessing the Institutional Set-up of National Innovation Systems*. Management of Technology, 207-222 pp. Available at: <http://homepages.ulb.ac.be/~mcincera/research/miami.PDF> (accessed August 10, 2016).
- [3] Islamutdinov, V.F. 2012. Technique of calculating the effectiveness of the institutions of innovative environment. *World Applied Sciences Journal*, 18 (Special Issue of Economics): 128-134.
- [4] Islamutdinov, V.F. 2014. Approaches to forecasting the evolution of institutions of the innovative environment. *Life Science Journal*, 11(11s): 421–425.
- [5] Kondratyeva, E.V. 2009. *Efficiency analysis of various elements of the innovation infrastructure created during the implementation of Russian innovation project*. Russian Economic Congress. Available at: www.econorus.org/consp/files/tjev.doc (accessed August 10, 2016)
- [6] Lamberova, N.A. 2012. *The impact of intellectual property institutions on the innovative development of the economy*. Synopsis of thesis by Ph.D. in Economics. Kazan. Kazan (Volga) Federal University.
- [7] Nikonova, I.A. 2009. Efficiency assessment of development institutions. *Promyshlennye Vedomosti*, 11–12 pp. November-December.
- [8] Polterovich, V.M. 2007. *Towards a New Theory of Reform*. Available at: <http://www.cemi.rssi.ru/rus/publicat/e-pubs/ep99004.htm> (accessed December 10, 2013)
- [9] Strambach, S. 2011. *Path dependency and path plasticity: the co-evolution of institutions and innovation – the German customized business software industry*. Available at: http://www.uni-arburg.de/fb19/fachgebiete/wirtschaftsgeographie/workingpapers/wp02_08.pdf (accessed August 10, 2016).
- [10] Ton, G., Rau, M.L., de Grip, K. and Klerkx, L. 2011. *Effectiveness of Innovation Grants on Smallholder Agricultural Producers: protocol for an explorative systematic review*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London, Available at: <https://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/Q43%20INNOVATION%20FUNDS%20protocol.pdf?ver=2011-12-22-152139-027>

The Complexity of Poverty Among Benteng Chinese in Tangerang District, Indonesia

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Purwanto, E., Kameo, D.D., Ihalauw, J.J., Priyanto, S.H. 2017. The complexity of poverty among Benteng Chinese in Tangerang District, Indonesia. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 820– 831.

Abstract:

The purpose of this research is to investigate what are determinants of the poverty among Benteng Chinese in Tangerang district, Indonesia. The research utilises a grounded theory based on in-depth interviews with key informants which most are Benteng Chinese. The research conducted data triangulation to get data saturation and data quality, rigor, trustworthiness and confirmability or validity and reliability in quantitative term. The result of the study shows that the determinants of poverty are complex. Integration of the structural theory of poverty, the cultural theory of poverty, the individual theory of poverty and the cyclical interdependencies theory of poverty are used to explore the complexity of the poverty. Finally, a mini theory of the complexity of poverty is built on findings of the research.

Keywords: poverty; theories of poverty; complexity of poverty; poor Chinese

JEL Classification: I38; P36; P46

Introduction

Benteng Chinese are the Chinese of Tangerang district, Indonesia. Their ancestors have lived in Tangerang since the 1400s. Tjwan (2008:12) said that Jakarta urbanites call Peranakan Chinese in Tangerang as Cina Benteng (Fortress Chinese). Because an ancient name of the Tangerang district is Benteng city, then Benteng Chinese refer to Chinese residents in Tangerang district. Benteng is the Indonesian word for fortress. Dutch in the colonial era built a fortress on the banks of the Cisadane river. It was the front-line defence for the Dutch port of Batavia against attacks from the Sultanate of Banten. During the Dutch colonial era, Chinese residents lived in the fortress, so they were called Fortress Chinese (Cina Benteng). Currently, Jakarta urbanites stereotype Benteng Chinese as backward Chinese or poor Chinese because of the fact that many poor Chinese live in this district.

This fact is in contrast with the prosperity of other Chinese in Indonesia. Prosperity usually is attached to identity of the overseas Chinese because of their economic domination, such as in Southeast Asia and especially in Indonesia. Redding (1993), Hamilton (1998), Hefner (1998), and Mackie (1998) chronicled the economic superiority of overseas Chinese compared with indigenous people. Hefner (1998) stated that the Chinese

population is about 4 percent of Indonesian population, but they may dominate 70% to 75% of middle and large enterprises in Indonesia.

Therefore, there are three primary reasons we have chosen to research poverty in the Benteng Chinese community. First, in our observation, the social, economic, and cultural characteristics of the Benteng Chinese community are unique compared to other overseas Chinese communities in Indonesia. In particular, while most overseas Chinese communities in Indonesia are relatively prosperous, poverty is the norm for the Benteng Chinese. Secondly, the causes for this poverty are complex, and the usual theories of poverty do not appear to adequately explain it. Finally, there is a scarcity of published research on factors contributing to poverty in the Benteng Chinese community.

The structural theory of poverty, the cultural theory of poverty, the individual theory of poverty, and the cyclical interdependencies theory of poverty, which is an integration of the previous theories, are four theories of poverty that are found in contemporary literature (Bradshaw 2005). Based on the theories of poverty, this research investigated:

- the characteristics of poverty of Benteng Chinese in Tangerang district;
- how the structural theory of poverty explores the poverty of Benteng Chinese;
- how the cultural theory of poverty explores the poverty of Benteng Chinese;
- how the individual theory of poverty explores the poverty of Benteng Chinese;
- how the cyclical interdependencies theory of poverty explores the poverty of Benteng Chinese?

This research uses grounded theory to conduct in-depth analysis and build a model or theory of poverty. The complexity of the poverty model is proposed as the climax of the research.

Conclusions

While existing theories of poverty typically explain poverty as stemming from political, social, and economic distortion or discrimination factors (the structural theory of poverty), or as a result of cultural disadvantages (the cultural theory of poverty), or as produced by individual deficiencies (the individual theory of poverty), or as a result of the cumulative or cyclical interdependence of the structural, cultural and individual distortions (the cycle theory of poverty), this new theory provides a fresh and more realistic explanation. The research indicates, for example, that political discrimination is not an independent variable directly causing poverty as the dependent variable. The new theory postulates that poverty in this community is caused by both unemployment and a lack of civil rights accessibility. The lack of civil rights accessibility is in turn caused by statelessness which itself is often a result of political discrimination, bureaucracy barriers, social pressures, and carelessness. Unemployment is caused by the lack of job opportunities, a situation quite often caused by statelessness factors.

The structural theory of poverty indicates that social distortion is a direct cause of Benteng Chinese poverty, the new theory suggests that in reality social distortions lead to unemployment, and the unemployment inevitably contributes to poverty. These social distortions are traceable to a lack of trust relationships (*xinyong*), in which *xinyong* is the strength in overseas Chinese business networks. This lack of trust relationship then contributes to ethnicity stigmas and social class awareness among the Benteng Chinese people, along with primordial bounding, ultimately resulting in *gong xiao*, which is the term in the Chinese dialect referring to the bad habit of forgetting the kindness or assistance of others.

The structural theory of poverty explains poverty in terms of economic distortions, the new theory that it is proposed here suggests that the economic distortions alone are not causing this poverty directly. Rather, economic distortions lead to disguised unemployment and the multiplication of subsistence workers (*i.e.* subsistence farmers) which in turn impacts community income levels and contributes to Benteng Chinese poverty. These economic distortions then are just one link in a long chain of conditions, all of which may be indicted as indirectly causes of poverty. Some economic distortions, for example, are rooted in a lack of *guanxi*, which is the term in Chinese business networks for personal relationships. Furthermore, this lack of the *guanxi* is often caused by the Totok Chinesees' superiority feelings and the marginalization of the Benteng Chinese in Indonesia's Chinese communities, with a further result of cultural acculturations and lack of assimilation of Benteng Chinese with the indigenous culture and people.

The cultural theory of poverty explains poverty as a product of cultural disadvantages. The new theory proposed here suggests that cultural disadvantages alone are not a direct cause of Benteng Chinese poverty. Rather, such cultural distortions affect life-style, resulting in deficits such as unstable marriages and gambling habits which inevitably contribute to poverty in the community. These cultural distortions are in turn linked with problems related to cultural acculturation and assimilation.

As the individual theory of poverty broadly explains poverty in terms of individual deficits. The new theory proposes that there are a number of additional factors behind these individual deficits which must be considered. Among these are individual self-image, low motivation and lack of creativity in the workplace, and these in turn can be traced back to cultural acculturation and assimilation difficulties as well as problems related to lack of education.

In the structural dimension, poverty in and of itself can cause a poor experience in the area of political discrimination, bureaucracy barriers and social pressures that are an inevitable result. These in turn can lead to the statelessness state. Poverty creates a distinct ethnicity stigma for the Benteng Chinese in other Chinese communities, leading to excessive social class awareness among the Benteng Chinese people. This further contributes to a lack of trust relationships (*xinyong*), so that the poverty itself eventually leads to further marginalization of the Benteng Chinese in Indonesian Chinese communities. In the individual dimension, poverty also results in a low level of education, further exacerbating the other contributing factors. The relationship between micro and macro can be seen in terms of political discrimination causing problems both with assimilation and with cultural acculturation, and these further aggravate social distortions among the poor Benteng Chinese.

Acknowledgement

This article is based on my Ph.D. dissertation that was submitted in partial fulfilment of the requirements for the degree of Doctor in Development Studies, Development Studies Doctorate Degree Program at Satya Wacana Christian University, Salatiga, Indonesia. This research is supervised by Prof. Dr. Daniel D. Kameo, Prof. Dr. John JOI Ihalauw and Prof. Dr. Sony Heru Priyanto. I have to thank to them, because without their assistance and dedicated involvement in every step throughout the process, this paper would have never been accomplished.

References

- [1] Bitsch, V. 2005. Qualitative Research: A Grounded Theory Example and Evaluation Criteria. *Journal of Agribusiness*, 23(1): 75-91.
- [2] Blank, R.M. 2005. Poverty, Policy and Place: How Poverty and Policies to Alleviate Poverty Are Shaped by Local Characteristics. *International Regional Science Review*, 28(4): 441-464. DOI: <http://dx.doi.org/10.1177/0160017605278999>
- [3] Bradshaw, T. K. 2006. Theories of Poverty and Anti-Poverty Programs in Community Development. *Working Paper Series*, RUPRI Rural Poverty Research Center, Columbia, Missouri. Available at: <http://www.rupri.org/wp-content/uploads/Theories-of-Poverty-and-Anti-Poverty-Programs-Working-Paper-Series.-T.-Bradshaw-February-2006.pdf> (accessed 10.8.2010).
- [4] Couldrey, M. and Herson, M. 2009. *Forced Migration Review*, 32: 2.
- [5] Easterly, W. 2006. *The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good*, New York: The Penguin Press, ISBN: 1594200378, 9781594200373, 436 pp.
- [6] Efferin, S. and Pontjoharyo, W. 2006. *Chinese Indonesian Business in the Era of Globalization: Ethnicity, Culture and the Rise of China*, in Suryadinata (Ed.), *Southeast Asia's Chinese Businesses in an Era of Globalization*. Institute of Southeast Asian Studies, Singapore, 102-161, pp.
- [7] Fusch, P. I., and Ness, L. R. 2015. Are We There Yet? Data Saturation in Qualitative Research. *The Qualitative Report*, 20(9): 1408-1416.
- [8] Glaser, B. G., and Strauss, A. L. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Aldine Publication Co., Chicago. ISBN-10: 0202302601, 271 pp. Available at: http://www.sxf.uevora.pt/wp-content/uploads/2013/03/Glaser_1967.pdf
- [9] Goris, I., Harrington, J. and Köhn, S. 2009. Statelessness: what it is and why it matters. *Forced Migration Review*, 32: 4-6.
- [10] Hamilton, G.G. 1998. "Culture and Organization in Taiwan's Market Economy", Social Science Research Council; Joint Committee on Southeast Asia and China, in Hefner, R.W. (Ed.), *Conference Market Cultures: Society and Morality in the New Asian Capitalisms*; 1994, 41-77 pp., Cambridge; MA Westview Press, Boulder, CO; A Member of Perseus Books, L. L. C., ISBN: 0813333601, 0813333598
- [11] Hefner, R. W. 1998. "Markets and Justice for Muslim Indonesians", in Hefner, R.W. (Ed.), *Market Cultures: Society and Morality in the New Asian Capitalisms*. Westview Press, A a Member of Perseus Books, L. L. C. Available at: <http://press.princeton.edu/chapters/s6966.pdf>
- [12] Harsono, R. and Triharyanto, B. 2008. *Jalan Berliku Menjadi Orang Indonesia: Kisah Tujuh Perempuan Tonghoa Korban Diskriminasi*, Kepustakaan Populer Gramedia, Jakarta. ISBN13: 9789799101303, 125 pp.
- [13] Jonker, J. and Pennink, B. 2010. *The Essence of Research Methodology*. Springer. ISBN-13: 978-3-540-71658-7 e-ISBN: 978-3-540-71659-4, DOI 10.1007/978-3-540-71659-4 Springer Heidelberg Dordrecht London New York, Available at: <http://www.yanchukvladimir.com/docs/Library/Essence%20of%20Research%20methodology%20-%20A%20Concise%20Guide%20for%20Master%20and%20PhD%20Students%202010.pdf>

- [14] Kompas, T. 2010. *Derita Mereka Tak Pernah Berakhir* Available at: <http://print.kompas.com/>
- [15] Locke, K.D. 2001. *Grounded Theory in Management Research*, SAGE Publications, London, ISBN-10: 0761964282, ISBN-13: 978-0761964285, 160 pp.
- [16] Manly, M. Persaud, S. 2009. UNHCR and responses to statelessness. *Forced Migration Review*, 32: 7-10.
- [17] Mackie, J. 1998. Business Success Among Southeast Asian Chinese: The Role of Culture, Values, and Social Structures, in Hefner, R.W. (Ed.), in Hefner, R. W. (Ed.), *Market Cultures: Society and Morality in the New Asian Capitalisms*, Boulder, Col: Westview Press, A Member of Perseus Books, L. L. C., 129-146 pp.
- [18] Narwoko, J. D. and Suyanto, B. 2006. *Sosiologi: Teks Pengantar dan Terapan*. Jakarta: Kencana Prenada Media Group, ISBN-10: 085741185724, 392 pp.
- [19] Purwanto, E. 2012, *Kompleksitas Kemiskinan Tionghoa Benteng*, Program Pascasarjana Universitas Kristen Satya Wacana, Salatiga, ISBN-13: 978-979-95924-5-3
- [20] Redding, S. G. 1993. *The Spirit of Chinese Capitalism. Volume 22 in De Gruyter Studies in Organization, Edition 22 from Studies in Organization*, Walter de Gruyter, New York.
- [21] Sachs, J. 2005. *The End of Poverty: How We Can Make It Happen in Our Lifetime*, England, Penguin Books, London. ISBN -10: 0141018666, ISBN -13: 978-0141018669, 416 pages
- [22] Setiono, B. G. 2008. *Tionghoa dalam Pusaran Politik*, TransMedia Pustaka, Jakarta, ISBN: 9797990524
- [23] Smith, S. C. 2005. *Ending Global Poverty: A Guide to What Works*, Palgrave Macmillan, New York.
- [24] Soto, H. D. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*, Basic Books, New York. Available at: <https://yendieu.files.wordpress.com/2009/04/the-mystery-of-capital.pdf>
- [25] Suhandinata, J. 2009. *WNI Keturunan Tionghoa dalam Stabilitas Ekonomi dan Politik Indonesia*, Penerbit PT Gramedia Pustaka Utama, Jakarta, ISBN-10: 9792241523, ISBN-13: 9789792241525, 428 pp.
- [26] Suryadianata, L. 2002. Ethnic and National Identities of the Chinese in Indonesia: A Reexamination. *Asian Culture*, 26 (June), 12-25 pp.
- [27] Suyanto, B. and Karnaji. 2006. Stratifikasi Sosial: Determinan dan Konsekuensi, in Narwoko, J.D. and Suyanto, B. (Eds.), *Sosiologi: Teks Pengantar dan Terapan*, Edisi Kedua Kencana Prenada Media Group, Jakarta.
- [28] Tan, A L. 2008. *Rahasia Kekayaan Orang-Orang Cina* Cet. 1st Edition. Arti Bumi Intaran, Yogyakarta, ISBN-13: 978-9791583382, 144 pp.
- [29] Tan, M. G. 2008. *Etnis Tionghoa di Indonesia*, Yayasan Obor Indonesia, Jakarta, ISBN-10: 979-4616893, ISBN-13: 9789794616895, 314 pp.
- [30] Trijono, L. 2004. *The Making of Ethnic & Religious Conflicts in Southeast Asia: Cases and Resolutions*, CSPA Books, Yogyakarta. ISBN-10: 979-9820308, ISBN-13: 978-9799820303, 290 pp.
- [31] Tjwan, G.G. 2008. *Desa Dadap: Wujud Bhineka Tunggal Ika*, Elkasa, Jakarta, ISBN-10: 979-9836735, ISBN-13: 978-9799836731, 304 pp.
- [32] White, P. 2009. Reducing *de facto* statelessness in Nepal. *Forced Migration Review*, 32: 28-29.
- *** Jakarta Post, 2010. Tales of stateless, foreigner status Jakartan Chinese, *The Jakarta Post*, February 12. Available at: <http://www.thejakartapost.com/news/2010/02/12/tales-stateless-foreigner-status-jakartan-chinese.html> (accessed 10.6.2010)

Analysis of the Development of Regional Disparities in Slovakia

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Suggested Citation:

Kotulič, R., Marchevská, M. 2017. Analysis of the development of regional disparities in Slovakia, *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 832 – 838.

Abstract:

Currently exited the problem of slow economic growth, the development in backward regions of Slovakia came sharply to the forefront. Consistent implementation of new economic theories to the economic practice can help to the sustainable development of each region as well as to the revitalization of their business environment. There are various approaches and methods used in evaluation of regional differences. Among the most commonly used methods based on the analysis of the indicator of the region GDP per capita (b. c.) is the analysis on the basis of the direct method, *i.e.* measuring speed (m) and Gini coefficient (IG). The aim of this article is to evaluate the level of economic development of Presov region (the most backward region of Slovakia) relative to other regions of Slovakia and to point out the economic divergence in the Slovak Republic. We assume that within the period under review the widening of regional disparities occurs. This analysis confirmed our assumption.

Keywords: economic growth; regional development; regional GDP; measured speed (m)

JEL Classification: O4 ; R5; M20

Introduction

The economy transformation from a centrally planned to a market economy is accompanied by a fall in GDP and industrial production practically in all countries of Central and Eastern Europe. The decline was due to a variety of factors already known, such as: deformed structure of the economy, trade liberalization, and related work is the very tough competitive environment. Catching up with the developed regions of the European Union is lengthy in terms of time, what is dealt with in a variety of domestic and international studies and publications Adamišín (2008), Rajčáková (2009), Huttmanová and Synčáková (2009), Kotulič and Adamišín (2012), Maier and Tödttling (1998), Sloboda (2006), Enea *et al.* (2012), Ungureanu and Matei (2007), Bogdan (2011), Bogdănoiu (2008), Văcărescu Hobeianu (2016), Štefko and Nowak (2014), Nedomlelova *et al.* (2017).

At present, there is outputted problem of slow economic growth in underdeveloped regions of Slovakia. It is, therefore, necessary to find new solutions to new approaches and sophisticated regional policy approach. Consistent implementation of new economic theories in economic practice can help the long-term sustainable development of each region as well as the recovery of their business environment. The use of such expertise in economic policy concept will be a prerequisite for the revitalization of the microspheres in the conditions of transitional economies (Kotulič 2006).

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Conclusion

Using the assessment of regional development based on measuring the speed, it may be pointed out that the most backward region of Slovakia (Presov region) is not achieving the desired level of convergence in regional development with the rest of Slovakia. This fact is consistent with the classical theory of regional development, especially in terms of the theory of central places by W. Christaller, the successor to J. Friedmann's theory of polarized development, according to which the country's economic growth could be enhanced by the hierarchical system of cities and their functional regions. Strengthening the hierarchical system of places, however, inevitably leads to the selection of growth poles, which does not guarantee the achievement of the desired convergence regions (Blažek 1993, Asaturov *et al.* 2015).

Less developed regions always come across many obstacles. Low income leads to low savings; low savings slows the growth of capital; lack of capital prevents the introduction of new machinery and rapid productivity growth; Low productivity leads again to a low pension. How to break this vicious circle is a question that will occupy the country in this century? One of the possible ways to improve the conditions for small and medium-sized enterprises is eliminating bureaucratic obstacles, in doing so their low-skilled workforce would be able to be effectively used in a trade or other form of business, which would allow accelerating the process of convergence of underdeveloped regions to the level of developed countries.

The need to eliminate the backwardness of underdeveloped regions through higher dynamics of economic growth also comes up against real limits of uncompleted standard road infrastructure, without which in the near future the actual start of the innovation potential of any of the less developed regions in the Slovak Republic would not be possible. As a consequence of the agglomerate model of economy and development of polarization threatens the Slovak Republic even greater deepening economic disparities between the more developed and lagging regions.

Acknowledgement

Supported by the Scientific Grant Agency of the Ministry of Education (Project KEGA No. 035PU-4/2016 on the topic: Microeconomics for managers - innovation of structure, content and the method of teaching the subject; Project KEGA No. 032PU-4/2014 on the topic: Preparation of educational materials for the first level of study programme Environmental Management and follow-up study programme Environmental Management; Project VEGA No. 1/0139/16 on the topic: Analysis of determinants and factors affecting the efficiency and competitiveness of entities working the soil in the Slovak Republic).

References

- [1] Asaturov, K., Teplova, T., and Hartwell, C. A. 2015. Volatility spillovers and contagion in emerging Europe. *Journal of Applied Economic Sciences*, 10(6): 929-945.
- [2] Adamišín, P. 2008. "Macroeconomic coherences of regional development in the Slovak republic". In: *Paper presented at the international conference Hradecké ekonomické dny 2008*. Hradec Králové, Czech Republic. Gaudeamus. 7-12.
- [3] Blažek, J. 1993. *Regionální vývoj a regionální politika: hlavní přístupy v zemích západní Evropy*. [Regional development and regional politics: main approaches in countries of the Western Europe]. In: Sýkora, L. (ed.): *Teoretické přístupy v současné geografii. [Theoretical approaches in contemporary geography]*. Praha. Available at : http://geography.upol.cz/soubory/lide/tousek/KGG_RPRR_01.pdf
- [4] Blažek, J., and Uhlíř, D. 2002. *Teorie regionálního rozvoje: nástin, kritika, klasifikace* [Theory of regional development]. Vyd. 1, Praha: Univerzita Karlova, 211 pp. ISBN: 8024603845
- [5] Bogdan, A.M. 2011. European Union funds - a solution for the Romanian economic recovery. *Journal of Applied Economic Science*, 6(2): 115-120.

- [6] Bogdănoiu, C.L. 2008. Risk taking in economical – financial activity. *Journal of Applied Economic Sciences*, 3(2): 79-84.
- [7] Buček, M. 1992. *Priestorová ekonomika*. [Spatial economics]. Bratislava: Ekonomická univerzita, ISBN: 8022504068, 9788022504065, 148 pp.
- [8] Chojnicki, Z., 1996. "Region w ujęciu geograficzno-systemowym". In: Czyn, T. (ed.). *Podstawy regionalizacji geograficznej*. Poznań: Bogucki Wydawnictwo Naukowe, Available at: http://foliags-o.geo.uni.lodz.pl/foia11/Wojcik_Region%20w%20podejsiach%20nowej%20geografii%20regionalnej.pdf
- [9] Enea, C., Enea, C., and Stegaroiu, C.E. 2012. Comparative analysis of the GORJ County of socioeconomic with neighboring counties in crisis. *Challenges of the Knowledge Society, Economics*, 1317-1324.
- [10] Gallo, P., Taušová, M., and Gonos, J. 2016. Leadership style model based on managerial grid. *Actual problems of economics*, 178(4): 246-252.
- [11] Gburová, J., and Marchevská, M. 2016. *Marketingová komunikácia v maloobchode*. [Marketing communication in the retail industry]. Prešov: Bookman, s.r.o.
- [12] Hurbankova, L. 2007. Priame metódy merania úrovne regiónov. [The direct methods of measurement, the levels of the regions]. *Forum statisticum Slovacum: The Journal of the Slovak Statistical and Demographic of the Company*, 3(6): 52-55.
- [13] Huttmanová, E., and Synčáková, L. 2009. Dimensions for evaluation of sustainable development and human development. In: *Paper presented at the International Conference Hradecké Ekonomické dny 2009*. Hradec Králové, Czech Republic. Gaudeamus. 204-211.
- [14] Klamár, R. 2010. "Metódy analýzy regionálneho rozvoja a regionálnych disparít". [Methods of analyses of regional development and regional disparities]. In: *Michaeli, E., Matlovič, R., Ištók, R. et al. (ed.). Regionálny rozvoj pre geografov*. [Regional development for geographers]. University of Prešov. Prešov: Grafotlač.
- [15] Kotulič, R. 2006. Foreign direct investment and their influence on economic growth and regional development. *Review of Economic Perspective*, 4(2): 15-25.
- [16] Kotulič, R., and Adamišin, P. 2012. Economic effects of the foreign direct investments management on the development of Slovak regions. Paper present at the international in: *Klímová, V., Žitek, V. (ed.): XV. Medzinárodné kolokvium o regionálnych viedach*. 20.–22. června 2012, Brno: Masarykova univerzita. 288-295.
- [17] Lisý, J. et al. 2007. *Ekonomía novej ekonomike*. [The economics of the new economy]. Bratislava: Ekonomická univerzita v Bratislave. ISBN: 9788080781644, 634 pp.
- [18] Maier, G., and Todtling, F. 1998. *Regionálna a urbanistická ekonomika II*. [Regional and urban economy II], Iura Edition, ISBN: 80-8044-049-2, 320 pp.
- [19] Matlovič, R., and Matlovičová, K., 2004. Vývoj regionálnych disparít na Slovensku a problémy regionálneho rozvoja Prešovského kraja. [Regional development disparities and regional development issues in Slovakia Prešov region]. *Folia Geographica*, Volume XLII, (8): 66-88.
- [20] Michaeli, E., Matlovič, R., Ištók, R., et al. 2010. *Regionálny rozvoj pre geografov*. [Regional development for geographers], Vydavateľstvo Prešovskej univerzity, ISBN-10: 8055500657, 9788055500652, 717 pp.
- [21] Nedomeleova, I., Staňková, L., Vavrek, R. 2017. Impact of minimum wage in V4 countries. *Journal of Applied Economic Science*, 12(2): 332-341.
- [22] Rajčaková, E. 2009. *Regionálny rozvoj a regionálna politika Európskej únie a Slovenska*. [Regional development and regional policy of the European Union and Slovakia]. Bratislava: Geografika. ISBN-13: 978-80-89317-09-7

- [23] Sloboda, D. 2006. *Slovensko a regionálne rozdiely – teórie, regióny, indikátory, metódy*. [Slovakia and regional disparities – theory, regions, indicators, methods]. Bratislava: Konzervatívny inštitút M. R. Štefánika, Available at: http://www.konzervativizmus.sk/upload/pdf/Slovensko_a_regionalne_rozdiely.pdf
- [24] Štefko, R., and Nowak, S. 2014. Cooperation shrines of Europe in regional management and development. *Polish Journal of Management Studies*, 10(2): 209-215.
- [25] Tvrdoň, J., Hamalová, M., and Žárska, E. 1995. *Regionálny rozvoj*. [Regional development]. Bratislava: Ekonomická Univerzita, ISBN: 80-225-0671-0 174 pp.
- [26] Ungureanu, L., and Matei, I.V. 2007. Nonlinear problems in economic development. *Journal of Applied Economic Sciences*. Volume I, 2(1): 5-11.
- [27] Văcărescu Hobeau, L. 2016. The major role of the small and medium-sized enterprises in the market economy. *Journal of Applied Economic Sciences*, 11(3): 351-363.
- [28] Vidová, J. 2008. Establishment of Industrial Parks and their Effects on Unemployment in the Economy. *Ekonomický Časopis*, 59(8): 841-855.
- [29] Výrostková, E. 2010. *Regionálna ekonomika a rozvoj*. [Regional Economics and development]. Bratislava: Iura edition. ISBN: 978-80-8078-361-7, 352 pp.
- *** Statistical Office of the Slovak Republic. Hrubý domáci produkt 2000-2013. [Gross domestic product 2000 – 2013.] Available at: <https://slovak.statistics.sk/wps/portal/ext/home/> (accessed January 7, 2014).

The Relationship between Public Expenditures on Research and Development and Economic Growth -Example for the Czech Republic, Denmark and Slovakia

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Suggested Citation:

Szarowská, I. 2017. The relationship between public expenditures on research and development and economic growth - example for the Czech Republic, Denmark and Slovakia. *Journal of Applied Economic Sciences*, Volume XII, Summer 3(49): 839 – 849.

Abstract:

This article is devoted to the examination of public expenditures on research and development (R&D) in terms of volume, use, forms of aid and its aim is to verify the relationship between public R&D expenditures and economic growth in the Czech Republic, Denmark and Slovakia in the period 1995 – 2014. Empirical evidence is based primarily on data collected from the OECD database. The Johansen cointegration test is applied for analysing the long-term relationship and the Error Correction Model is added for short-term dynamics. The results of estimations have confirmed the positive long-term relationship between Gross Domestic Expenditure on R&D and economic growth in Denmark and Slovakia. Anyway, the testing of public expenditures on R&D by sectors has provided for a verified cointegration for one sector in all countries at least. Concretely, the long-term relationship has been proven for all sectors in Denmark, for government, private non-profit and higher education sectors in Slovakia and for the government sector in the Czech Republic.

Keywords: research and development; economic growth; public expenditure; tax incentives; Error Correction Model

JEL Classification: O38; H25; F63

Introduction

Research and development (R&D), and its support is an economic-political issue, its scope and the forms are significantly affected by economic policy, as well as historical experience and country-specific priorities. The significance of R&D is highlighted in particular for its key role in the creation of new knowledge, products, and technologies that are essential for stable and sustainable economic growth and development of competitive advantages, as reported for example by Solow (1956), Gumus and Celikay (2015), Hud and Hussinger (2015), Szarowská (2016), Freimane and Băliņa (2016). Attention is paid to the issue of R&D at the level of the European Union (EU). The Europe 2020 Strategy, which aims to ensure the growth and competitiveness of the EU, has, among five fundamental objectives, investments of 3% of GDP in research and development.

In the empirical literature, it is possible to find results that confirm the positive, negative and zero relationship or the impact of R&D expenditures on economic growth. The goal of the article is, therefore, to determine whether there is a long-term relationship between expenditures on R&D and economic growth in the Czech Republic, Denmark and Slovakia. The introductory part will explore the support in the area of R&D in the Czech Republic, Denmark and Slovakia. Further, by using the cointegration method the empirical verification of the existence of relations between expenditures on R&D and economic growth in selected countries will also be carried out. Data on the size of public expenditures on R&D and economic development are drawn from the OECD database and other publicly available sources for the period 1995 -2014.

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Conclusion

The basic requirements of the development of each economy involve stable and sustainable economic growth. To ensure the sustainable growth it is necessary to improve the existing workforce, increase their productivity by improving the technology, working practices or innovations, and thus achieve greater competitiveness. An important prerequisite for this is the application of the growth and dissemination of the results of R&D.

The aim of the article was to determine whether there was a long-term relationship between expenditures on R&D and economic growth in the Czech Republic, Denmark and Slovakia. Following the availability of data collected from OECD database, the period 1995-2014 was chosen for the empirical validation.

Individual countries show a number of differences in R&D in providing support, which is given by the diversity of national policy priorities of R&D, institutions providing support of R&D, and in the form and amount of the support. In the case of Denmark these differences, for example, consist in the provision of completely unique forms of direct support, such as research bills for small and medium-sized businesses, subsidies for qualified employees, knowledge coupons, etc., which are not provided by the Czech Republic or Slovakia. Denmark also due to a long-time provision of support of R&D has a more elaborate R&D organization system, than it is the case of the other two countries. The Czech Republic and Slovakia have a very similar organizational structure, as well as forms of direct support provided. All countries were similar e.g. in the case of tax incentives to promote R&D, which were mainly in the form of deductions from the tax bases, and tax credits or also in the opportunities for accelerated depreciation on R&D.

The empirical validation of the existence of a long-term relationship between public expenditures on R&D and economic growth was performed by the Johansen cointegration test. On the basis of the results a positive long-term relationship between examined quantities in all countries has been confirmed; and in the case of Denmark and Slovakia it has been confirmed for total expenditures on R&D (GERD) as well as for individual sectors of the implementation of R&D (in Denmark for all, in Slovakia for Government, the private sector, and the non-profit sector, universities), while in the Czech Republic only the government sector has been demonstrated. After the evaluation of the results, we can say that Slovakia and the Czech Republic will have to go through a number of changes and solve many of the shortcomings in the R&D support system. The problem in these countries is primarily fragmentation and lack of coordination of the R&D support system. A way to solve this problem should be the coherence of the R&D support system and the exact delimitation of duties and powers, for example, by following the example of Denmark, such as the Central Ministry or Commission.

Acknowledgements

This paper ensued thanks to the support of Student Grant System of Silesian University SGS/17/2015 "Financial instruments of public support for research and development in the European Union".

References

- [1] Akcigit, U., Baslandze, S., and Stantcheva, S. 2015. *Taxation and the International Mobility of Inventors*. Available at: <http://www.nber.org/papers/w21024>. DOI:10.3386/w21024
- [2] Becker, B. 2015. Public R&D Policies and Private R&D Investment: A Survey of the Empirical Evidence. *Journal of Economic Surveys*, 29(5): 917–942. DOI:10.1111/joes.12074
- [3] Berliant, M., and Fujita, M. 2011. The Dynamics of Knowledge Diversity and Economic Growth. *Southern Economic Journal*, 77(4): 856-884.
- [4] Bilbao-Osorio, B., and Rodriguez-Pose, A. 2004. From R&D to innovation and economic growth in the EU. *Growth and Change*, 35(4): 434-455. DOI:10.1111/j.1468-2257.2004.00256.x
- [5] Blažka, M., Chvojka, M., and Šperlink, K. 2013. *Průvodce systémem veřejné podpory výzkumu, vývoje a inovací v České republice 2013*. Available at: <http://www.csnmt.cz/csnmt/publikace/?IDpub=34>

- [6] Bozkurt, C. 2015. *R&D Expenditures and Economic Growth Relationship in Turkey*. Available at: <http://www.econjournals.com/index.php/ijefi/article/viewFile/1038/pdf>
- [7] Castellacci, F., and Lie, Ch. M. 2015. Do the effects of R&D tax credits vary across industries? A meta-regression analysis. *Research Policy*, 44(4): 819-832. DOI:10.1016/j.respol.2015.01.010
- [8] David, P.A., Hall, B.H., and Toole, A.A. 2000. Is public R&D a complement or substitute for private R&D? A review of the econometric evidence. *Research Policy*, 29: 497-529. DOI:10.1016/S0048-7333(99)00087-6.
- [9] Dzambaska, E. 2013. Empirical Analysis of FDI and Tax Incentives on the Economic Growth in Republic of Macedonia. *Економски Развој*, 15(3): 103–27.
- [10] Faria, P., Martins, F.V., and Brandão, E.F. 2011. *How R&D and tax incentives influence economic growth: Econometric study for the period between 1995 and 2008 of EU-15*. Available at: http://www.fep.up.pt/investigacao/workingpapers/11.11.21_wp442.pdf
- [11] Freimane, R., and Bāliņa, S. 2016. Research and Development Expenditures and Economic Growth in the EU: A Panel Data Analysis. *Economics and Business*, 29(1): 5–11. DOI: 10.1515/eb-2016-0016
- [12] Garnier, G., György, E., Heineken, K., Mathé, M., Puglisi, P., Ruà, S., Skonieczna, A., and Van Mierlo, A. 2014. *A wind of change? Reforms of Tax Systems since the launch of Europe 2020*. Office for Official Publications of the European Communities.
- [13] Guellec, D. and Pottelsberghe, B. Van 2003. The impact of public R&D expenditure on business R&D. *Economics of Innovation and New Technology*, 12(3): 225-243.
- [14] Gumus, E. and Celikay, F. 2015. R&D Expenditure and Economic Growth: New Empirical Evidence. *Margin: The Journal of Applied Economic Research*, 9(3): 205–17. DOI: 10.1177/0973801015579753
- [15] Halásková, M. and Bazsová, B. 2016. Evaluation of the efficiency of research and development in EU countries. *Acta Academica Karviniensia*, 16(4): 32-45.
- [16] Hall, B., and Van Reenen, J. 2000. How effective are fiscal incentives for R&D? A review of the evidence. *Research Policy*, 29(4-5): 449-469.
- [17] Horowitz, I. 1967. *The Relationship between Interstate Variations in the Growth of R&D and Economic Activity*. Available at: <http://ieeexplore.ieee.org/xpl/login.jsp?reload=true&tp=&arnumber=6848769&url=http%3A%2F%2Fieeexplore.ieee.org%2Fiel7%2F69%2F4358933%2F06848769.pdf%2F>
- [18] Hud, M. and Hussinger, K. 2015. The impact of R&D subsidies during the crisis. *Research Policy*, 44(10): 1844-1855. DOI:10.1016/j.respol.2015.06.003
- [19] Huňady, J., Orviská, M. and Šarkanová, B. 2014. Determinants of European Firm's Innovation and the Role of Public Financial Support. *European Financial and Accounting Journal*, 9(1): 62-84. DOI:10.18267/j.efaj.115
- [20] Johansen, S. 1991. Cointegration and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models. *Econometrica*, 59(6): 1551–1580.
- [21] Kim, J.W. 2011. The Economic Growth Effect of R&D Activity in Korea. *Korea and the World Economy*, 12(1): 25-44.
- [22] Köhler C., Laredo, P., and Rammer, C. 2012. *The impact and effectiveness of fiscal incentives for R&D*. Available at: www.nesta.org.uk/sites/default/files/the_impact_and_effectiveness_of_fiscal_incentives.pdf
- [23] Lilles, A. and Rõigas, K. 2015. How higher education institutions contribute to the growth in regions of Europe? *Studies in Higher Education*, 21(14): 65-78. DOI:10.1080/03075079.2015.1034264.
- [24] Neubig, T., Galindo-Rueda, F., Appelt, S., Criscuolo, Ch. and Bajgar, M. 2017. *Fiscal incentives for R&D and innovation in a diverse world*. Available at: http://www.keepeek.com/Digital-Asset-Management/oecd/taxation/fiscal-incentivesfor-r-d-and-innovation-in-a-diverse-world_5jlr9stckfs0-en

- [25] Peng, L. 2010. *Study on Relationship between R&D Expenditure and Economic Growth of China*. Available at: http://www.pucsp.br/ictim/ingles/downloads/papers_2010/part_8/1_Study%20on%20
- [26] Solow, R.A. 1956. Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1): 65-94. DOI:10.2307/1884513
- [27] Svennson, R. 2008. *Growth through Research and Development – what does the research literature say? Vinnova Report VR 2008:19*, Stockholm: Vinnova, 1–66 pp.
- [28] Szarowská, I. 2016. Impact of Public R&D Expenditure on Economic Growth in Selected EU Countries. In *The 9th International Scientific Conference Business and Management 2016*. Vilnius: Vilnius Gediminas Technical University. Available at: http://bm.vgtu.lt/index.php/bm/bm_2016/paper/viewFile/504/587
- [29] Urbancová, H., Vnoučková, L. and Laboutková, Š. 2016. Knowledge transfer in a knowledge-based economy. *E&M Economics and Management*, 19(2): 73-86. DOI:10.15240/tul/001/2016-2-005
- [30] Úřad vlády ČR. 2015. *Analýza stavu výzkumu, vývoje a inovací v České republice a jejich srovnání se zahraničím v roce 2014*. Úřad vlády ČR.
- [31] Valek, T. 2015. *Přímá a nepřímá podpora výzkumu a vývoje v České republice, Rakousku a na Slovensku*. MSc. theses, Silesian University.
- [32] Westmore, B. 2013. *R&D, Patenting and Growth: The Role of Public Policy*. Available at: <http://dx.doi.org/10.1787/5k46h2rfb4f3-en>
- [33] Yanyun, Z., and Mingqian, Z. 2004. *R&D and Economic Growth-Panel Data Analysis in ASEAN+3 Countries*. Available at: <https://faculty.washington.edu/karyiu/confer/seoul04/papers/zhao.pdf>
- [34] Zachariadis, M. 2004. *R&D-induced Growth in the OECD?* Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-9361.2004.00243.x/pdf>
- [35] Žůrková, D. 2016. *Veřejné výdaje na výzkum a vývoj a jejich vztah s ekonomickým růstem v České republice, Dánsku a na Slovensku*. MSc. theses, Silesian University.
- *** Danmarks. 2005. *Research and development in Denmark. 2005*. Available at: <http://dg.dk/ filer/Publikationer/Research%20and%20Development%20in%20DK%202005.pdf>
- *** Deloitte. 2014. *2014 Global Survey of R&D Tax Incentives*. Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-global-rd-survey-aug-2014.pdf>
- *** Deloitte. 2015. *Taxation and Investment in Denmark 2015*. Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-denmarkguide-2015.pdf>
- *** Ernst and Young. 2015. *Worldwide R&D incentives reference guide 2014-15*. Available at: [http://www.ey.com/Publication/vwLUAssets/EY-worldwide-randd-incentives-reference-guide/\\$FILE/EY-worldwide-randd-incentives-reference-guide.pdf](http://www.ey.com/Publication/vwLUAssets/EY-worldwide-randd-incentives-reference-guide/$FILE/EY-worldwide-randd-incentives-reference-guide.pdf)
- *** OECD 2010. *R&D tax incentives: Rationale, design, evaluation*. Available at: <http://www.oecd.org/sti/ind/46352862.pdf>
- *** OECD 2014. *OECD Science, Technology and Industry Outlook 2014*. OECD Publications Service.
- *** Zákon (Act) č. 333/2014 ktorým sa mení a dopĺňa zákon č. 595/2003 Z. z. o dani z príjmov v znení neskorších predpisov a ktorým sa menia a dopĺňajú niektoré zákony. Available at: <http://www.hanr.sk/predme/3332014.pdf>
- *** Zákon (Act) č. 595/2003 Z.z. o dani z príjmov, v znení neskorších predpisov. Available at: <http://www.szsk.sk/legislativa/zakon-o-dani-z-prijmov/>
- *** Zákon (Act) č. 586/1992 Sb., o daních z příjmů, ve znění pozdějších předpisů. Available at: <http://portal.gov.cz/app/zakony/zakon.jsp?page=0&nr=586-2F1992&rpp=15#seznam>

The Impact of Higher Education on National Economic and Social Development: Comparative Analysis

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Suggested Citation:

Levchenko, O.M., Levchenko, A.O., Horpynchenko, O.V., Tsarenko, I.O. 2017. The impact of higher education on national economic and social development: comparative analysis. *Journal of Applied Economic Sciences*, Volume XII, Summer, 3(49): 850 – 862.

Abstract:

The effect of the higher education under the conditions of knowledge-based economy and under influence of the 4th Industrial Revolution that started at the current stage of economies' development, is being experienced by each country. The purpose of this paper is to identify the economic and social aspects of obtaining higher education, the influence of higher education on the economy, the impact of higher education in the context of current changes on the necessity of the lifelong learning. Particular actuality is associated with necessity of the lifelong learning in the process of working at current economy. The study covers the relationship between the level of education and the development of social and economic potential of a country, the impact of higher education on it. As a result the basic requirements which the sector of higher education should face at modern stage, especially in the context of transformation of countries under influence of the 4th Industrial Revolution.

Keywords: higher education; lifelong learning; knowledge-based economy; 4th Industrial Revolution; economic and social development

JEL Classification: A22; A23; I23; I24; I25; I26; O1

Introduction

Education, in general, has long been viewed as an important determinant of economic well-being and the university education, in particular, as the preferred route for a professional career. The actuality of this aspect increases under the conditions of knowledge-based economy and under influence of the 4th Industrial Revolution. In today's technological and informational society, the level of intellectual development of human resources becomes a key indicator of post-industrial economy. Thus, higher education competitiveness is an indicator of sustainable development of a country's economy and human potential of its population. Higher education at modern stage is not only the factor and catalyst for further economic development of any country that ensures all areas of economic

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activity by the professional human resources, being not only as their producer, but also as a consumer to involve in project activities, the creation of new technologies and so on. Thus, the role of higher education becomes increasingly important in terms of reorienting the current development of the society at the next stage, where the higher educational is more flexible to changes in the environment, creative and result-oriented, focused on the need not only to give a knowledge for students but to learn getting it independently, and the most importantly - the educational institutions are increasingly becoming independent and self-sufficient institutions which produce not only a professional staff but also high-tech products, involving in the process of creating its graduates. So, the powerful educational institutions become technological business incubators with own resources and the possibilities to get additional financing.

But this direction of development of higher education gives new challenges. The introduction of the high technologies into the production process creates the need to improve the knowledge and skills of the employees, the implementation of the continuous lifelong learning and appropriate incentives for the professional development.

Lifelong learning is becoming more and more important for the countries that want to be competitive in the global knowledge economy. So the era of the 21st century is not only a new landmark development but, above all, a transformational shift to the intellectualization as the process of the saturation of the information environment by the intellectual assets.

Conclusion

Therefore, we can summarize that the impact of higher education under the conditions of knowledge-based economy is growing up with each year especially in the context of transformation of countries under the influence of the 4th Industrial Revolution. But their peculiarities are changing too. In particular:

- the changes in the requirements to the graduates: not only persons with received knowledge within academic course, but also persons with the skills and abilities on continuing the process of lifelong learning independently (learning to learn), the ability to independent searching of the necessary information from the extensive array and its analysis;
- the changes of philosophy of education: providing the interactive partnership's model the relationship between professors and students as subject with subject unlike current 'subject – object model';
- the educational environment which gives the opportunity for professors to play the role of a guide on the way of 'knowledge mining' should be created in these universities;
- the services of higher education are getting more internalized with increasing of numbers of foreign students abroad;
- universities are becoming more global, thus we should apply a new criteria of quality evaluation in global dimension, which are well-wide recognized;
- system of higher education institutions is becoming not only a producer of educational services and a new knowledge to its customers (which has the own centres, powerful scientific centres and laboratories, where able to attract students of such universities), but also as their consumers through the creation the powerful research centres in such universities that are actively involved to the introduction of innovation in different spheres of economy and innovation activities;
- the appeal of «education hubs» is broadening;
- technology is becoming increasingly central to education worldwide;
- educational cooperation through the creation of consortia is becoming more common;
- principle of regulation of higher education by the state is modified because the competition among universities is increased due to the lack of borders in the educational environment;
- the need to involve the universities to the project activities aimed at solving both national and global issues of economy of the countries.

References

- [1] Aghion, P. and Howitt, P. 1998. *Endogenous Growth Theory*. Cambridge, MA: MIT Press, ISBN: 0262011662, 9780262011662, 694 pp.
- [2] Akbari, H., MacDonald, M. 2015. *Immigration through education, Canada, Australia, New Zealand*. Available at: <http://osvita.ua/abroad/47461/>
- [3] Asmaa, Abu, M. 2016. *What role will education play in the Fourth Industrial Revolution?* Available at: <https://www.weforum.org/agenda/2016/01/what-role-will-education-play-in-the-fourth-industrial-revolution/> (accessed 2016.22.01)
- [4] Benhabib, J., and Spiegel, M.M. 1994. The role of human capital in economic development: Evidence from aggregate cross-country data. *Journal of Monetary Economics*, 34(2): 143–173. Available at: [http://dx.doi.org/10.1016/0304-3932\(94\)90047-7](http://dx.doi.org/10.1016/0304-3932(94)90047-7)
- [5] Holmes, C. 2013. Has the expansion of higher education led to greater economic growth? *National Institute Economic Review*, 224 (1): 29-47. Available at: <http://dx.doi.org/10.1177/002795011322400103>
- [6] Forest, J.J. and Altbach, P.G. (Eds.). 2006. *International Handbook of Higher Education*, 243–280. Dordrecht: Springer.

- [7] Goodchild, L. 2015. *Higher education and economic development: The importance of building technological capabilities*. Available at: <https://www.elsevier.com/atlas/story/people/higher-education-is-key-to-economic-development>, (accessed 2015.27.07)
- [8] Goodchild, L. 2015. *Higher education is key to economic development (but it's not as simple as you think)* By Lucy Goodchild van Hilten July 2015 winner. Available at: <https://www.elsevier.com/atlas/story/people/higher-education-is-key-to-economic-development>, (accessed 2015.27.07)
- [9] Hanushek, A. 2010. *Education and Economic Growth*. Available at: <http://hanushek.stanford.edu/publications/education-and-economic-growth>
- [10] Hanushek, A. 2016. *Will more higher education improve economic growth?* Available at: <http://oxrep.oxfordjournals.org/content/32/4/538.abstract>
- [11] Kruss, G., McGrath S., Petersen I., Gastrow M. 2015. Higher education and economic development: The importance of building technological capabilities. *International Journal of Educational Development*, 43: 22-31. Available at: http://www.academia.edu/21367955/Higher_education_and_economic_development_The_importance_of_building_technological_capabilities
- [12] Lucas, R.E. 1988. On the mechanics of economic development. *Journal of Monetary Economics*, 22: 3–42. DOI: [http://dx.doi.org/10.1016/0304-3932\(88\)90168-7](http://dx.doi.org/10.1016/0304-3932(88)90168-7)
- [13] Mankiw, N.G., Romer, D., and Weil, D. 1992. A contribution to the empirics of economic growth. *The Quarterly Journal of Economics*, 107 (2): 407–437. DOI: <http://dx.doi.org/10.2307/2118477>.
- [14] Melchor E. 2015. *The Role of Higher Education in Promoting Lifelong Learning*. [Retrieved 2015-24-06]. Available at: <https://ec.europa.eu/epale/en/resource-centre/content/role-higher-education-promoting-lifelong-learning>, (accessed 2015.24.06)
- [15] Nelson, R.R. and Phelps, E. 1966. Investment in humans, technology diffusion and economic growth. *American Economic Review*, 56(2): 69–75.
- [16] Trow, M. 2006. Reflections on the Transition from Elite to Mass to Universal Access: Forms and Phases of Higher Education in Modern Societies since WWII. *International Handbook of Higher Education*, 243-280. DOI: http://dx.doi.org/10.1007/978-1-4020-4012-2_13.
- [17] Tsarenko, I. 2016. The competitiveness of higher education of Ukraine according to the international dimension. *Baltic Journal of Economic Studies*, 2(1):107-113.
- *** *Global Index Report 2016*. Available at: <http://www.socialprogressimperative.org/global-index/>
- *** *Human Development Report 2014: Work for Human Development*.
- *** OECD 2015. *Education at a Glance 2015: OECD Indicators*. OECD Publishing. Available at: http://blogs.edweek.org/edweek/high_school_and_beyond/Education%20at%20a%20Glance%202015.pdf
- *** *Report to UNESCO of the International Commission on Education of the Twenty-First Century*. Delors' 1996. Available at: http://www.unesco.org/education/pdf/15_62.pdf
- *** *Statistical books The EU in the world*. Available at: <http://ec.europa.eu/eurostat/documents/3217494/6975194/KS-EX-15-001-EN-N.pdf/d05075db-b5cf-4751-b62b-f49cc89f3fa2>
- *** *The Global Innovation Index 2014. Winning with Global Innovation 2014*. Available at: <https://www.globalinnovationindex.org/gii-2016-report>
- *** *The Global Innovation Index 2016. Winning with Global Innovation 2016*. Available at: <https://www.globalinnovationindex.org/gii-2016-report>

- *** *The QS Top universities 2016*. Available at: <http://www.topuniversities.com/system-strength-rankings/2016>
- *** *Top-10 countries where most intelligent students learn 2016*. Available at: <http://www.osvita.org.ua/news/78385.html>
- *** *U21 Ranking of National Higher Education 2016*. Available at: <http://www.universitas21.com/article/projects/details/152/u21-ranking-ofnational-higher-education-systems>
- *** World Bank 2014. *World Bank Report*. Washington: World Bank.

International Skilled-Migration and Regional Growth in Poland

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Suggested Citation:

Di Berardino, C., D' Ingiullo, D., Onesti, G. 2017. International skilled-migration and regional growth in Poland. *Journal of Applied Economic Sciences*, Volume XII, Summer, 3(49): 863 - 874.

Abstract:

The paper aims to investigate the relationship between international migration and economic growth across the regions of Poland. In most studies, the potential determinants of migration have been investigated, while the impact of these flows of individuals on economic growth has received less attention. Using a panel data during the time period 1999-2005, the authors tested if different kinds of migration flows, distinguished by educational level, had an effect on economic growth. In order to control both the issue of endogeneity, due to the presence of some potentially endogenous variables among the explanatory variables, and the problem of omitted variables, the paper implements the difference-GMM of Arellano-Bond. The findings show that high-skilled in-migration flows has a strong positive impact on the growth dynamics of Polish regions. On the other hand, the outflow of skilled individuals reduces the regional skill-intensity and has a negative effect on income. The results also support the idea that skilled-migration can promote the provincial convergence.

Keywords: skilled-migration; international flows; regional convergence; Poland

JEL Classification: R10; R11; R23

Introduction

The present paper focuses on the effect of migration on destination places. In particular, by distinguishing the international flows we are interested in through investigating the role of skill-selective migration on regional growth in Poland. The economic and demographic characteristics make Poland an interesting case study in Europe. This country, indeed, represents the most populous among the new European Union members. Furthermore, the literature on the relationship between migration and regional disparities of Eastern European countries is less common than the literature on developed countries. The main findings reveal, on average, an amount of migration flows relatively less and decreasing with respect to the other developed European Union members (Kertesi 2000, Fidrmuc 2004, Bornhorst and Commander 2006, Ghatak *et al.* 2008, Ghatak and Pop Silaghi 2011). Moreover, the literature gap is accentuated by the additional scarcity of studies focused on the effect of migration on regional convergence in Eastern Europe (Kirdar and Saracoğlu 2008, Wolszczak-Derlacz 2009, Bunea 2011). This paper adds to the literature confirming that mobility of the more educated has a positive effect on the host regions and a detrimental effect on the sending regions in Poland. The remainder of the paper is organized as follow. In Section 1 is provided the literature empirical background, in section 2, the descriptive analysis and econometric model will be specified and the results will be presented. Finally, in the last section, we provide the main conclusions of the analysis.

Conclusions

The aim of the present paper is to analyse the consequences of the relationship between international mobility and economic growth in an emerging country like Poland during the period 1999-2005 and to extend the results to other national contexts through innovative features.

The study indicates the presence of a decreasing process in terms of economic disparities and finds that the characteristics of migration flows contribute to explaining this phenomenon. The results attest to how heterogeneous the effects of migration are when the skill content is considered. In particular, in line with other many studies, focused on the consequences of internal selective migration (Fratesi and Percoco 2014, for the Italian regional context and Kubis and Schneider 2016, in Germany), the estimates highlight that regions mostly capable of attracting high-skilled individuals experienced a positive path of growth in terms of income per capita. This paper, indeed, shows how the other two kinds of flows with lower skill contents do not exert a significant effect on economic growth. Therefore, the analyses confirmed that the attractiveness of tertiary educated individuals represents a key factor able to create a regional competitive advantage.

If a consolidated literature has shown the existence of the link between interregional flows and economic growth, analogous consequences are also found when international mobility is taken into consideration. However, when attention is paid to the convergence process, the analyses suggest a different picture with respect to the literature. The final effects due to the mobility depend, indeed, on the regional composition of the migration flows. The higher human capital emigration in the centre regions has surely contributed to the convergence process. However, the peripheral areas, especially those located in the Eastern part, continue to register high human capital emigration rates that are, at times, higher than the in-migration. The situation could lead to a trend reversal with different consequences on the economic disparities. In other words, a divergence process could take the place of the previous slight convergence. These considerations are also interesting if we consider the entrance of Poland in the European Union. In this direction, future researches are necessary in order to verify if and to what extent this phenomenon represents a structural break and if it has had an effect on the evolution of both internal and international migration.

In summary, the present paper suggests paying attention to both on strategies able to attract human capital and policy oriented to promoting growth and to reducing the economic disparities. The policy maker should be focused on several actions able to sustain the ability of a territorial system to attract human capital in order to create virtuous mechanisms for the economic development. We strongly believe that the entrance of the Poland in European Union has reinforced the role of Polish regions in terms of attractiveness of migration flows.

References

- [1] Anderson, T. W., Hsiao, C. 1982. Formulation and estimation of dynamic models using panel data. *Journal of Econometrics*, 18(1): 47-82. DOI [http://dx.doi.org/10.1016/0304-4076\(82\)90095-1](http://dx.doi.org/10.1016/0304-4076(82)90095-1)
- [2] Arellano, M., Bond, S. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58: 277-97. DOI <http://dx.doi.org/10.2307/2297968>
- [3] Barro, R.J., Sala-i-Martin, X. 1992. Convergence. *Journal of Political Economy*, 100(2): 223-51. DOI <http://dx.doi.org/10.1086/261816>
- [4] Berry, C.R., Glaeser, E.L. 2005. The divergence of human capital levels across cities. *Papers in Regional Science*, 84(3): 407-44. DOI <http://dx.doi.org/10.1111/j.1435-5957.2005.00047.x>
- [5] Blanchard, O.J., Katz, L.F. 1992. Regional Evolutions. *Brookings Papers on Economic Activity*, (1): 1-61.
- [6] Boldrin, M., Canova, F. 2001. Inequality and convergence in Europe's regions: Reconsidering European regional policies. *Economic Policy*, (32): 207-53.
- [7] Borjas, J. 1999. The economic analysis of immigration. In *Handbook of labor economics*. Edited by Ashenfelter O., Card D., Volume 3. North Holland, Amsterdam. DOI [http://dx.doi.org/10.1016/S1573-4463\(99\)03009-6](http://dx.doi.org/10.1016/S1573-4463(99)03009-6)

- [8] Bornhorst, F., Commander, S. 2006. Regional Unemployment and its Persistence in Transition Countries. *Economics of Transition*, 14(2): 269-88.
- [9] Brunow, S., Nijkamp, P., Poot, J. 2015. The impact of international migration on economic growth in the global economy. In *Handbook of the Economics of International Migration*. Edited by Barry R. Chiswick and Paul W. Miller, Volume 1, 1027-75. Elsevier, Amsterdam. DOI <http://dx.doi.org/10.1016/B978-0-444-53768-3.00019-9>
- [10] Bunea, D. 2011. Cross-country Internal Migration and Convergence in Romania. *Annales Universitatis Apulensis Series Oeconomica*, 13(2).
- [11] Cheshire, P., Carbonaro, G. 1995. Convergence/divergence in regional growth rates: an empty black box? *Department of Economics, Faculty of Urban & Regional Studies*, 89-111 pp.
- [12] Coulombe, S., Tremblay, J. 2009. Migration and skills disparities across the canadian provinces. *Regional Studies*, 43(1): 5-18. DOI <http://dx.doi.org/10.1080/00343400701654111>
- [13] Di Bernardino, C., Sarra, A. 2013. Does immigration causes the regional economic growth? The place of origin is a selective factor of territorial dynamics. *Politica Economica*, 29(2): 151-80. DOI <http://dx.doi.org/10.1429/76221>
- [14] Dolado, J., Goría, A., Ichino, A. 1994. Immigration, human capital and growth in the host country - evidence from pooled country data. *Journal of Population Economics*, 7(2): 193-215. DOI: <http://dx.doi.org/10.1007/BF00173619>
- [15] Etzo, I. 2008. Internal Migration: A Review of the Literature, *MPRA Paper*, 8783, 1-28 pp.
- [16] Fidrmuc, J. 2004. Migration and regional adjustment to asymmetric shocks in transition economies. *Journal of Comparative Economics*, 32(2): 230-47. DOI <http://dx.doi.org/10.1016/j.jce.2004.02.011>
- [17] Fingleton, B. 2001. Theoretical economic geography and spatial econometrics: Dynamic perspectives. *Journal of Economic Geography*, 1: 201-25.
- [18] Fischer, M.M., Stirböck, C. 2006. Pan-european regional income growth and club-convergence. *Annals of Regional Science*, 40: 693-721. DOI <http://dx.doi.org/10.1007/s00168-005-0042-6>
- [19] Fratesi, U., Percoco, M. 2014. Selective migration, regional growth and convergence: Evidence from Italy. *Regional Studies*, 48(10): 1650-68. DOI <http://dx.doi.org/10.1080/00343404.2013.843162>
- [20] Ghatak, S., Mulhern, A., Watson, J. 2008. Inter-Regional Migration in Transition Economies: The Case of Poland. *Review of Development Economics*, 12: 209-22.
- [21] Ghatak, S., Pop Silaghi, M.I. 2011. Why Do Not They Move from Rural to Urban Areas? *Romanian Journal of Economic Forecasting*, 1: 143-58.
- [22] Hierro, M., Maza, A. 2010. Foreign-born internal migrants: Are they playing a different role than natives on income convergence in Spain? *Applied Geography*, 30(4): 618-28. DOI <http://dx.doi.org/10.1016/j.apgeog.2010.01.004>
- [23] Kertesi, G. 2000. Migration and Commuting: Two Potential Forces Reducing Regional Inequalities in Economic Opportunities? *SOCO Project paper*, 77, Institute for Human Sciences, Vienna.
- [24] Kirdar, M.G., Saracoğlu, D.Ş. 2008. Migration and regional convergence: An empirical investigation for turkey. *Papers in Regional Science*, 87(4): 545-66. DOI <http://dx.doi.org/10.1111/j.1435-5957.2008.00178.x>
- [25] Kubis, A., Schneider, L. 2016. Regional migration, growth and convergence – A spatial dynamic panel model of Germany. *Regional Studies*, 50(11): 1789-1803. DOI <http://dx.doi.org/10.1080/00343404.2015.1059932>

- [26] Li, X., Mc Hale, J. 2006. *Does brain drain lead to institutional gain? A cross country empirical investigation*. Manuscript, Queen's University. Available at: http://leonardo3.dse.univr.it/espe/documents/Papers/D/5/D5_3.pdf
- [27] Mankiw Gregory, N., Romer, D., Weil, D.N. 1992. A contribution to the empirics of economic growth. *Quarterly Journal of Economics*, 107(2): 407-37. DOI <http://dx.doi.org/10.2307/2118477>
- [28] Maza, A. 2006. Migrations and regional convergence: The case of Spain. *Jahrbuch Fur Regionalwissenschaft*, 26(2): 191-202. DOI <http://dx.doi.org/10.1007/s10037-006-0009-9>
- [29] Niebuhr, A., Granato, N., Haas, A., Hamann, S. 2012. Does labour mobility reduce disparities between regional labour markets in Germany? *Regional Studies*, 46(7): 841-58. DOI <http://dx.doi.org/10.1080/00343404.2010.532118>
- [30] Østbye, S., Westerlund, O. 2007. Is migration important for regional convergence? Comparative evidence for norwegian and swedish counties, 1980-2000. *Regional Studies*, 41(7): 901-15. DOI <http://dx.doi.org/10.1080/00343400601142761>
- [31] Rappaport, J. 2005. How does labor mobility affect income convergence? *Journal of Economic Dynamics and Control*, 29(3): 567-81. DOI <http://dx.doi.org/10.1016/j.jedc.2004.03.003>
- [32] Reichlin, P., Rustichini, A. 1998. Diverging patterns with endogenous labor migration. *Journal of Economic Dynamics and Control*, 22(5): 703-28.
- [33] Shioji, E. 2001. Composition effect of migration and regional growth in japan. *Journal of the Japanese and International Economies*, 15(1): 29-49. DOI <http://dx.doi.org/10.1006/jjie.2000.0461>
- [34] Vidyattama, Y. 2016. Inter-provincial migration and 1975-2005 regional growth in Indonesia. *Papers in Regional Science*, 95: 87-S105. DOI <http://dx.doi.org/10.1111/pirs.12120>
- [35] Wolszczak-Derlacz, J. 2009. *The Impact of Internal and International Migration on Regional Convergence in Poland*, Contemporary Migrations: European and Polish Dilemma, University of Warsaw.

Innovative Entrepreneurship Financing in the Republic of Kazakhstan

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Suggested Citation:

Toxanova, A., Galiyeva, A., Muhamedzhanova, A., Baibusinova, G., Kulubekova, A., Ashikbayeva, Z. 2017. Innovative Entrepreneurship Financing in the Republic of Kazakhstan. *Journal of Applied Economic Sciences*, Volume XII, Summer, 3(49): 875 - 892.

Abstract:

The topicality of the study is determined by the need to find optimal ways of innovative entrepreneurship financing as an important factor of economic growth of the country's economy. The article is aimed at developing conceptual, organizational and methodical bases of innovative development financing in the context of macroeconomic reforms in Kazakhstan, identifying the role of state development institutions and financial instruments applied in the implementation of the state program of industrial-innovative development. The research substantiates the specific proposals to improve the state policy in innovation financing, shows the role of financial and credit instruments in the economic and innovative development of the country as the fundamental factors affecting the dynamic development of innovation, studies the basic forms and methods of the country's innovative development stimulation, examines international experience and analyzes the level of innovative activity financing. The research findings are of practical value for improving the process of state regulation of the innovative entrepreneurship financing, the rational allocation of available public and private (commercial) resources; streamlining methods of providing state support for innovative entrepreneurship; raising the level of investment attractiveness of innovative entrepreneurship through the organization of effective interaction of this institute with innovative infrastructure facilities.

Keywords: entrepreneurship financing; innovations; budget financing; state institutions; credit instruments; investment projects

JEL Classification: O310; O320; O380; G320; G380

Introduction

Financing of innovative activity of entrepreneurship is allocation and use of funds for the design, Financing of innovative activity of entrepreneurship is allocation and use of funds for the design, development and organization of manufacture of new products, services, for the creation and introduction of new equipment, new technologies, development and introduction of new organizational forms and methods of management. Access to financing remains a major constraint to innovation.

The financial system of Kazakhstan is based, primarily on the banking segment, as the stock market is playing a minor role in the financing of companies so far. The banking system favors industries which are mostly based on incremental innovations. And the banks, as a rule, are not willing to bear the risks associated with the (radical) innovation projects and SMEs, particularly start-ups and service companies that are unable to provide collateral. At the same time, financing of radical innovation is closely connected with the development of equity instruments, and in particular those relating to funding at the initial stage of the company's work. Focus on equity financing is likely to increase in the medium and long term, as the economy develops and becomes more complex.

Conclusion

Summarizing, it can be stated that in the course the research, the following tasks have been solved:

- 1) the role of financial and credit instruments in the economic and innovative development of the country is shown as the fundamental factors influencing the dynamic development of innovations;
- 2) the main forms and methods of stimulating the country's innovative development have been studied. Stimulation of innovation concerns all business entities. The low level of interest rates in the country positively influences the development of innovative processes, and a high level of inflation reduces this indicator. The level of competition in the market exerts an ambiguous impact on the innovation activities. The product patent system stimulates innovation, acting as a mechanism for reducing risks. Preferential taxation is an incentive for the search for innovations and their commercialization. The creation of technological parks where incentives are provided for participants in the innovation process also contributes to the development of innovative activities;
- 3) the foreign experience has been studied, which shows that the formation of the competitiveness of the national economy is based on the development of the innovation sphere, while financial and credit instruments play a key role as levers of influence. In recent years, to correct market and systemic 'failures' in the areas where acute social needs exist, OECD countries and emerging economies have used targeted tools to stimulate the demand for innovations. These tools include public procurement, regulation, standards, consumer policy, consumer innovation initiatives, and the leading market initiatives;
- 4) the analysis of economic and innovative development of the Republic of Kazakhstan has been carried out. In Kazakhstan an increasingly important emphasis is put on innovations, the country strives to develop scientific and technological capabilities and to implement close integration of science and business. Nevertheless, in recent years, gross domestic expenditure on R & D has not grown as fast as GDP. Innovative activity in the country does not have a stable growth trend yet, which is connected with post-crisis phenomena in Kazakhstan's economy;
- 5) the progress of implementation of state programs for the innovative development promotion has been considered. Activation of innovation activities gains key importance for the sustainable economic growth of the country. At the same time, without a purposeful participation of the state, it is impossible to achieve a breakthrough in technological and structural reorganization. The state needs to fulfill its strategic and coordinating functions in economic processes. The Government of Kazakhstan has extensive programs aimed at diversifying the economy, including programs to stimulate innovation activities: Strategy 2020, the State Program for Accelerated Industrial and Innovative Development of Kazakhstan for 2010-2014 (Stage 1); State Program for Innovative and Industrial Development of the Republic of Kazakhstan for 2015-2019 (Stage 2), Program for Innovation Development and Assistance to Technological Modernization, R & D Strategy and Programs, Comprehensive Business Support Programs such as the "Business Road Map 2020" and "Productivity 2020" programs. The focus of these programs is on creating a favorable business environment and encouraging the private sector; introduction of incentives for the creation of knowledge-intensive, high technology export-oriented enterprises, introduction of new means and tasks to address a number of problems that limit innovative development;
- 6) the level of innovation funding has been analyzed and problems encountered by the system of financial support for innovation have been identified: the fragmented nature of the state policy in the field of financing and its insufficiency to create a broad mass of innovative enterprises, the lack of a sufficient system for financing innovative projects at all stages of the project, especially at the initial stage; inadequate provision of service support in forwarding of innovative entrepreneurship when obtaining financial resources; insufficiently effective financing mechanisms for entering the international market; insufficient financing of researchers' scientific activities leading to 'staff scarcity' in the scientific and innovation spheres.

The proposed measures in the field of grant and bank financing, as well as tax incentives will not only increase the number of firms actively participating in innovation activities, but also will create an appropriate investment climate in the country for active implementation of innovations.

References

- [1] Abdymanapov, S., Toxanova, A. 2016a. Government Support of Innovative Business in the Republic of Kazakhstan. *IEJME — Mathematic Education*, 11(5): 1033-1049. Available at: <http://www.iejme.com/arsiv/136>
- [2] Abdymanapov, S., Toxanova, A. 2016b. Development of Public-Private Partnership in the Republic of Kazakhstan. *IEJME — Mathematic Education*, 11(5): 1113-1126. Available at: <http://iejme.com/makale/540>
- [3] Akmaeva, R.I. 2012. *Innovative Management of a Small Enterprise*: Textbook. Rostov-on-Don: Phoenix.
- [4] Barysheva, A.V. 2012. *Innovative Management*: Textbook. Moscow: Dashkov and K.
- [5] Fagerberg, J., Srholec, M. 2013. National innovation systems, capabilities and economic development. *Research Policy*, 37(9):1417-1435. DOI: [10.1016/j.respol.2008.06.003](https://doi.org/10.1016/j.respol.2008.06.003)
- [6] Kazybaev, A.K. 2004. Management of small innovative businesses. *Problems of the Agricultural Market*, 3: 42-46.
- [7] Kurnyshev, V. 2014. *Regional economy. Fundamentals of the theory and methods of research*: Textbook. Second Edition. Moscow: Knorus.
- [8] Melnikov, R.M. 2016. *Performance evaluation of socially significant investment projects*. Moscow: Prospekt. Available at: <https://books.google.kz/books?isbn=5392213863>
- [9] Nurlanova, N. 2013. *Priorities of industrial-innovative development of Kazakhstan's regions: selection criteria and implementation potential*. Almaty: Economics.
- [10] Shipp, S.S., Gupta, N., Lal, B., Scott, J.A., Weber, Ch.L., Finin, M.S., Blake, M., Newsome, Sh., Thomas, S. 2012. *Emerging Global Trends in Advanced Manufacturing*. Institute for Defense Analyses. Available at: <http://www.manufacturing-policy.eng.cam.ac.uk/policies-documents-folder/usa-emerging-global-trends-in-advanced.pdf>
- [11] Smailov, A. (Ed.) 2013. *Scientific and technical potential of Kazakhstan: a brief overview*. Statistical Yearbook. Astana: RK Statistical Agency Press.
- [12] Teal, E.J., Izzo, G.M., Toxanova, A. 2011. Entrepreneurial development in Kazakhstan: A review and update. *Journal of International Business and Cultural Studies*, 5: 1-10. Available at: <http://www.aabri.com/manuscripts/10743.pdf>
- [13] Toxanova, A. 2013. *Kazakhstan in the Global Competitiveness Ranking of the World Economic Forum (2013-2014)*. Proceedings of the International Scientific Conference "Sustainable economic growth: innovations and competitiveness", L.N. Gumilyov Eurasian National University and Lucerne University of Applied Sciences (Switzerland).
- [14] Toxanova, A. 2015. Technology parks development, as an effective instrument of innovative business support in the Republic of Kazakhstan. *Bulletin of the Kazakh University of Economics of Finance and International Trade*, 3: 83-87.
- [15] Toxanova, A., Baizakov, S. 2012. *Innovation Performance Review of Kazakhstan*. United Nations New York and Geneva, (Chapter 1, pp. 1-11).
- [16] Toxanova, A., Paimkulova, A. 2011. Analytical assessment of structural characteristics of the economy of Kazakhstan. *EFI Journal*, 3: 25-32.

- *** ECE/CECI/14. 2012. Innovation Performance Review of Kazakhstan. United Nations Economic Commission for Europe. Available at: <https://www.unece.org/fileadmin/DAM/ceci/publications/icp5.pdf>
- *** EIS, 2013. *European Innovation Scoreboard*. European Union, 2014.
- *** ERI, 2015. *Kazakhstan's economy in 2015: expectations and forecasts*. Analytical report. Economic Research Institute, Astana, 19-25, pp.
- *** Humanitarian Encyclopedia. 2016. UNESCO Research and Development Expenditure Rating. Center for Humanitarian Technologies. Available at: <http://gtmarket.ru/ratings/research-and-development-expenditure/info>
- *** IPSTDC. 2010. The Interdisciplinary Plan of Scientific and Technological Development of the Country until 2020. Astana: Akorda. Available at: https://tengrinews.kz/zakon/pravitelstvo_respubliki_kazahstan_premier_ministr_rk/hozyaystvennaya_deyatelnost/id-P1000001291/
- *** MRD. 2014. *Development of entrepreneurship in Kazakhstan*. Ministry of Regional Development. Astana. Available at: <http://docplayer.ru/36008506-Ministerstvo-regionalnogo-razvitiya-respubliki-kazahstan-razvitiye-predprinimatelstva-v-kazahstane.html>
- *** NATD. 2016. State Support Instruments in the Field of Innovation Development. Available at: <http://natd.gov.kz/wp-content/themes/natd/pdf/natd.pdf>
- *** OECD Factbook 2013. Economic, Environmental and Social Statistics. Available at: <http://www.oecd.org/factbook>
- *** OECD Science, 2015. Technology and Industry Scoreboard 2015. Available at: <http://www.oecd.org/sti/scoreboard.htm>
- *** RK Law 534-IV. 2012. "On state support of industrial-innovative activity". Astana: Akorda.
- *** RK NCSTI and US NAS. 2006. *On the status and prospects of the development of science and technology in the Republic of Kazakhstan: the report of the National Center for Scientific and Technical Information of the Republic of Kazakhstan and the National Academy of Sciences of the United States on the conducted state scientific and technical expertise of the domestic scientific and technical potential and priority areas of science development (science auditing)*. Almaty.
- *** RK Statistical Agency. 2016. Indicators of the State Program for Innovative and Industrial Development of the Republic of Kazakhstan over 2016. Statistical Bulletins. Available at: www.stat.gov.kz
- *** Science and innovative activities of Kazakhstan in 2015. Statistical yearbook. Astana, 2015.
- *** SPAIID. 2010. State Program for Accelerated Industrial and Innovative Development of Kazakhstan for 2010-2014. Approved by the Republic of Kazakhstan President's Decree No.958 of March 19, 2010. Available at: <http://www.baiterek.gov.kz/en/programs/gpfiir-program/>
- *** SPIID. 2014. State Program for Innovative and Industrial Development of the Republic of Kazakhstan for 2015-2019. Approved by the Republic of Kazakhstan President's Decree No. 874.-11 of 1.08.2014. Available at: <http://baiterek.gov.kz/en/activities/state-programs/gpiir-2/>
- *** *The Global Competitiveness Report 2013–2014*. 2013. World Economic Forum Geneva. Available at: <https://www.weforum.org/reports/global-competitiveness-report-2013-2014>

Cross-Cultural Adaptability in a Sample of International University Students in Prague – Gender and Culture Effect

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Suggested Citation:

Gärtner, M., Sadílek, T., Zadražilová, D. 2017. Cross-cultural adaptability in a sample of International University Students in Prague – gender and culture effect. *Journal of Applied Economic Sciences*, Volume XII, Summer, 3(49): 893 - 906.

Abstract:

The Cross-Cultural Adaptability Inventory (CCAI) was administered to a sample (n= 152) of international and domestic students studying at the University of Economics in Prague to assess their cross-cultural adaptability. Adaptation to non-native cultural environments is essential for study or work related sojourns. The results indicate that as far as cross-cultural adaptability of students is concerned, there are significant differences between gender and country of origin groups as measured by Flexibility and openness dimension of the CCAI (FO scale). Among the main findings: female students scored higher than male students, Anglo-Saxon and French students scored higher and the Czech and Slovak students lower on the FO scale than the other culture groups. Possible reasons for these differences are discussed. To our knowledge, this is the first study of this kind conducted in Czechia.

Keywords: adaptability; culture; CCAI; university students

JEL Classification: M14; Z10

Introduction

In our globalised world, people move from one country to another to pursue their personal or professional interests. Such relocations demand considerable level of innate abilities and skills. Intercultural awareness and knowledge of different cultures is becoming a necessary aspect of life for international students and workers. One of the main advantages of moving across international borders is learning how to live in the globalised world. Indeed, businesses and universities use various training methods to facilitate the transition from one culture to another which can be a demanding process. According to the Czech Ministry of Education, Youth and Sport, there were over 42 000 foreign students studying at public and private universities in 2015 and there were about 12 500 Czech students studying at foreign universities (CMEYS 2016). The number of foreign students in Czechia is growing every year (www.czech.cz/en/104255).

Culture has been defined in many ways across many academic disciplines. Parsons, a sociologist, defines culture as the management unit of the social system (Jandourek 2001). Trompenaars an international management guru, defines culture as the means by which people communicate, perpetuate and develop their knowledge about attitudes towards life (Trompenaars *at al.* 1998). Hofstede (1997), a social psychologist, defines culture as collective

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programming of the mind. Berry, whose field of research is culturology, proposed that culture is a sum of ways of living of a group of people within a society which is culturally passed from one generation to another (Berry *et al.* 2002).

Cross-cultural adaptation, in literature often referred as acculturation, is a process of psychological adaptation of an individual to a new culture. According to Bennett, acculturation is a process in which intercultural sensitivity of an individual changes from an ethnocentric to an ethnorelativist stage. This change is the key to successful acculturation (Bennett 1998). According to Bennett, acculturation skill development is achieved at two levels: culture-specific and culture-general. At the culture-specific level, the relocating individuals need to be aware of the “emic” grid of their original culture in order to adopt effective communication in any new cultural environment with a different “emic” grid. At culture-general level, skills that would be useful in any cross-cultural situation are adopted by relocating individuals. This approach, based on more generalizable skills, is the intercultural equivalent of “etic” cultural analysis. According to Berry (2002), the cross-cultural adaptability varies considerably between individuals and is affected by a range of factors such as ethno-cultural background, gender, age, education level, etc.

According to Berry (2002), changes occur during the acculturation process in an individual due to his or her contact with individuals from another culture. During this process individuals may choose to abandon behavioural patterns common in the original culture and accept new patterns of behaviour (Berry *et al.* 2002). This process is commonly accompanied by feelings of uncertainty, frustration and depression. Such experiences are referred to in literature Oberg (1960), Hofstede (1997) as “Culture shock” (Hofstede 1997).

On the other hand, individuals from highly ethnocentric cultures may choose to retain behavioural patterns common in the original culture. In this case acculturation to a new culture may be extremely difficult or impossible (Berry *et al.* 2002). According to Berry (2002), personality traits are influential during acculturation of an individual. These include traits which make adaptation easier as well as those which make it more difficult. The author mentions, for example, extraversion and introversion. Others have used personality scales to reflect differences between individuals in their ability to adapt to new cultures (Eysenck Personality Inventory – EPI-1975), (Berry *et al.* 2002, 89)

Several instruments for measuring intercultural sensitivity have been developed and used extensively, such as The Intercultural Development Inventory (IDI) by Hammer and Bennett (2002), Development Model of Intercultural Sensitivity (DMIS) by Bennett (1998), Intercultural Sensitivity Scale (ISS) by Guo-Ming Chen and Starosta (2000), and the Cross-Cultural Adaptability Inventory (CCAI) by Kelly and Meyers (1995).

Kelly and Meyers (1995) suggest that there are four dimensions influencing the level of cross-cultural adaptability: openness and flexibility, personal autonomy, perceptual acuity and emotional resilience. Scales were created for each dimension. Flexibility and openness scale (FO scale) reflects individual’s tendency to be broad-minded and open toward others. The ability to be flexible and non-judgemental is often associated with cross-cultural effectiveness. Personal autonomy scale was created to assess how well one will be able to appreciate cultural differences while maintaining his or her personal sense of self. Perceptual acuity dimension focuses on one’s ability to identify both verbal and nonverbal cues from individuals from another culture. Finally, emotional resilience is defined as being able to maintain positive emotions while being surrounded by unfamiliar environment with respect to cultural cues. Individuals immersed in a new culture often experience negative emotional reactions (*i.e.*, culture shock). The emotional resilience scale was created to represent an individual’s ability to cope with these feelings. The CCAI is considered to be a reliable and valid instrument for assessing personality, behaviour and skills required for cross-cultural adaptation (Ward *et al.* 2000). According to Hoffman, the CCAI is the most reliable indicator of an individual’s cross-cultural adaptability (Hoffman 2002).

Focussing on groups involved in cross-cultural adaptation, previous studies indicate that cultural distance determined particularly by linguistic or religious differences may be an important factor influencing cultural adaptation (Berry *et al.* 2002). According to Berry, the greater the cultural difference between the original and the host culture, the greater the problems experienced by individuals (Berry *et al.* 2002). These results indicate that the greater the cultural difference between the original and the host culture, the greater the adaptation difficulties. Moreover, participants from countries with a long tradition of international travel, student exchange programs and

international professional sojourns could be expected to possess higher level of adaptation skills than those from inward looking ethnocentric cultures. It could therefore be expected that the scores on the CCAI scales will be different according to the culture of origin.

Previous research also indicates that women tend to be less adaptable to new local conditions than men, particularly in masculine oriented cultures. According to previous research, focussing on business sojourners, women seem to depend more on social support (Ward *et al.* 2001). Because of this finding, it is likely that women, particularly women sojourners, for example students, could be less adaptable to new local conditions than men. Consequently, it could be expected that the scores on the CCAI scales will be lower in women than in men (Ward *et al.* 2001, 93, 186).

In this study, the focus is on comparing gender and culture of origin of participants with respect to individual CCAI dimensions. Previous research is considered in the formulation of the research hypotheses. The dependent variables in this study are the levels of the CCAI dimensions. The independent variables which may influence the levels of CCAI dimensions are gender and cultural differences as defined by country of origin.

Conclusion

In conclusion, the most important finding of this study concerns the effect of gender and culture on adaptability to other cultures as measured by flexibility and openness (FO) dimension of the CCAI instrument. All females scored significantly higher than all males on this dimension. This finding could indicate a new positive development in the ability of women to relate to cultures other than their own, which is contrary to previous research. Czechs and Slovaks as a group scored significantly lower than all other culture groups combined and Czech and Slovak females scored significantly lower than the combination of all other females. It is evident that the significant differences in the flexibility and openness (FO) values between all females and males, Czechoslovak and other culture groups and Czechoslovak females and other females are due to the exceptionally high flexibility and openness scores for Anglo-Saxon and French female students. The reasons for high flexibility and openness scores for these students could be due to prevalence of long lasting democratic tradition, ethno-relativist and possibly also feminist attitudes in their home cultures. On the other hand, the Czech and Slovak students may still be under the influence of the past relative isolation of their cultures during communism. The tendency to stay isolated from other cultures is subject to cultural inertia and may have an impact for a long period of time. To our knowledge, this is the first study of this kind conducted in Czechia. For further similar studies, it could be advantageous to work with a bigger sample and larger spectrum of culture groups. Such research could be useful in formulating EU policies including improvement in intercultural understanding, university exchange programs and company professional sojourns.

Acknowledgement

The article has been supported by project IGA No. F2/50/2017", "Social and sustainable business in the context of international trade".

References

- [1] Bennett, M.J. 1998. *Basic Concepts in Intercultural Communication*. Intercultural Press, Yarmouth, Available at: <http://homes.lmc.gatech.edu/~herrington/classes/4406f2000/Hall.pdf>
- [2] Berry J.W., Poortinga. Y.H., Segall M.H., Dasen P.R. 2002. *Cross-Cultural Psychology, Research and Applications*, Cambridge University Press, Cambridge. Available at: https://tsu.ge/data/file_db/faculty_psychology/Cross-Cultural%20Psychology.pdf
- [3] Chen, G.M. and Starosta, W.J. 2000. The Development and Validation of the Intercultural Sensitivity Scale, *Human Communication 3*: 1-15, Available at: http://digitalcommons.uri.edu/cgi/viewcontent.cgi?article=1035&context=com_facpubs
- [4] Hammer, M.R., and Bennet, M.J. 2002. *The Intercultural Development Inventory (IDI) Manual*, Portland, Intercultural Communication Institute, Available at: <https://idiinventory.com/wp-content/uploads/2016/06/IDI-Resource-Guide-06-09-2016.pdf>
- [5] Hoffman, E. 2002. *Psychological Testing at Work*, McGraw Hill Co, Available at: <http://www.psgteam.com/wp-content/uploads/2013/09/PSG-Psychological-Testing-at-Work-Edward-Hoffman-PhD.pdf>
- [6] Hofstede, G. 1997. *Cultures and Organizations - Software of the Mind*. McGraw-Hill, New York, ISBN: 0070293074, 9780070293076, 279 pp.
- [7] Hofstede, G.J., Pedersen, P.B., Hofstede, G.H. 2002. *Exploring Culture: Exercises, Stories and Synthetic Cultures*, Nicholas Brealey Publishing, ISBN-10: 1877864900, ISBN-13: 9781877864902, 234 pp
- [8] Jandourek, J. 2001. *Sociologický slovník*, Praha, Portál, ISBN: 80-7178-535-0, 285 pp.
- [9] Kautsky, O. 1970. *Dabing, ano i ne*, Praha, Československý filmový ústav, 85 pp.
- [10] Štefanová, G. 2015. *Problematika filmového překladu: titulky a dabing*. Bachelor thesis, Masaryk University Brno, Available at: https://is.muni.cz/th/361570/ff_b/?lang=en

- [11] Kelly, C. and Myers J. 1995. *Cross Cultural Adaptability Inventory*, Published Minneapolis: National Computer Systems, Inc., 81 pp.
- [12] Oberg, K. 1960. *Culture shock and the problems of adjustment to new cultural Environments*. Practical Anthropology, Available at: https://apps.carleton.edu/curricular/ocs/moscow/assets/Culture_Shock.pdf
- [13] Parsons, T. 1952. *The Social System*, London, Tavistock, Available at: <http://home.ku.edu.tr/~mbaker/CSHS503/TalcottParsonsSocialSystem.pdf>
- [14] Sam, D.L., and Berry, J.W. 2006. *The Cambridge Handbook of Acculturation Psychology*, Cambridge University Press, Cambridge. Available at: http://assets.cambridge.org/97805218/49241/frontmatter/9780521849241_frontmatter.pdf
- [15] Selmer, J. 2000. *International Adjustment of Business Expatriates: The Impact of Age, Gender and Marital Status*, School of Business, Business Research Centre, Hong Kong Baptist University, 35 pp.
- [16] Trompenaars, F., and Hamden-Turner, C. 1998. *Riding the Waves of Culture*, McGraw-Hill, New York, Available at: https://ocan.yasar.edu.tr/wp-content/uploads/2013/09/Riding-the-waves_Part-1.pdf
- [17] Ward, C., Bochner, S., Furnham, A. 2001. *The Psychology of Culture Shock*, Routledge, New York, ISBN-10: 0415162351, ISBN-13: 9780415162357, 367 pp.
- [18] Ward, C., Berno, T., Main A. 2000. *Can the Cross-cultural Adaptability Inventory (CAI) predict cross-cultural adjustment?* Paper presented at XV International Congress of International Association for Cross-cultural Psychology, Pultusk, Poland
- *** Czech Ministry of Education, Youth and Sport. "Data o studentech, poprvé zapsaných a absolventech vysokých škol", Available at: <http://www.msmt.cz/vzdelavani/skolstvi-v-cr/statistika-skolstvi/data-o-studentech-poprve-zapsanych-a-absolventech-vysokych>

Participation of Universities in Building Innovative Economy of the Regions

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Suggested Citation:

Gruzina, Y.M., Buevich, A.P., Karamova, O.V. 2017. Participation of universities in building innovative economy of the regions. *Journal of Applied Economic Sciences*, Volume XII, Summer, 3(49): 907 - 922.

Abstract:

The article seeks to classify the innovative structure of universities, which allows identifying particular facilities of the universities' infrastructure based on definite criteria. It is focused on the development of comprehensive measures for incorporating the results of innovative, scientific and technological activities of higher education institutions into the economic activities of the subjects of the Russian Federation. The practical significance of the study lies in the possibility of using the results obtained by the state authorities during the implementation of the anti-crisis plan of the Russian Government, while forming and adjusting the strategy for the development of subjects of the Russian Federation and educational organizations to improve universities' cooperation with enterprises, develop the universities' innovative infrastructure, attract leading scientists to the universities, provide the universities' participation in the implementation of innovative development programs for publicly owned companies, create and develop university-based engineering centers, etc. The article contains the original outcomes of studying full functional infrastructure of the universities having a set of properties that would facilitate implementation of innovative processes on a regional and nationwide scale to ensure their effective functioning. The necessity of creating an organizational and functional model of the Russian universities' innovative development is substantiated.

Keywords: economy; management; region; university; innovative activities; innovative infrastructure

JEL Classification: O32

Introduction

The experience of developed countries confirms that in the conditions of global competition in the world market, one who has developed infrastructure for creating and implementing innovations is guaranteed to win (Guadix *et al.* 2016, Kasim *et al.* 2016, Kalnins and Jarohnovich 2016). Therefore, for the effective functioning of the country's innovative economy, the innovative infrastructure of the universities should have a set of such properties that facilitate the implementation of technologies for creation and dissemination of innovations on a regional and nationwide scale, which implies the active participation of the university's community in this process and the creation of business entities, small innovative enterprises by budgetary scientific and educational institutions for the practical application of the results of intellectual activity and implementation of innovative projects (ASI 2014).

At present, there are quite a few innovative infrastructure facilities in the world aimed at supporting and developing innovative projects, start-ups and innovative business: business incubators, technology parks, technopolises, innovation and technology centers, etc. All of them perform certain functions, provide various services, place certain demands on their residents and users. However, in most cases the boundaries between these elements are very blurred or even erased: they have the same goals, they provide the same services, but often there is no clear understanding of the differences between existing elements, their features and capabilities.

Conclusion

In the conditions of rapid development of society, fundamental changes are taking place in the system of higher education. Today we observe processes of sustainable integration and cooperation of science, education and the real sector of the economy, as a result of which high results are expected from the higher education system, first of all, making a significant contribution to the formation of regional and national innovative systems.

The article considers approaches to forming the university's innovative infrastructure as a set of interrelated and partly interdependent structural elements of the university's innovative activities with the overall goal of bringing innovative, organizational and information processes to a logical conclusion. The article reveals that the economic nature of the university's innovative infrastructure is determined by the high degree of influence exerted by innovative processes on the economic development of the region and the country.

The conducted analysis of the innovative infrastructure of 42 universities showed that the university's innovative activities are characterized, basically, by the stages of initiation and materialization of the idea; and such stages as the implementation efficiency assessment and innovation diffusion are in the course of formation and development. It can be stated that the appropriate management structure has not yet been formed, there are no clearly defined principles for creating the university's innovative infrastructure, and management functions at these stages of the innovation process have not been defined. Based on the outcomes of analysis of universities' R&D, it can be concluded that in most cases they are related to investment development, because there is no mechanism for their commercial implementation.

Studies of the universities' innovative activities have shown that most innovative infrastructures belong to the production and technological type of the organization, more than 20% of universities have an expert and consulting structure, 11% of organizations are characterized by a financial and investment structure. At present, 8 components of the innovative structure are characteristic for the universities: business centers, business incubators, technology parks, innovation and technology centers, multiuser centers, technopolises, special economic zones and innovation centers. Moreover, business incubators and innovation and technology centers can be referred to young innovative companies, which are present in 20 universities of the 42 surveyed. The multiuser centers available in 25 universities are the most common structure.

A parallel is drawn between a business company and a modern university with increasing frequency. In terms of business scope, number of employees, types of activities and other parameters, the university already refers to large management systems that are based on the principles and instruments of corporate governance. Studies have shown that the university's innovative activities depend on the state of the innovation environment, the external environment of the innovation organization. The main barrier to effective cooperation between universities and business is the absence or lack of institutional support, namely: there are no structures regulating innovation activities or they are insufficiently developed; there is no transparency in the organization of innovative activities; there is low level of trust among the participants and innovative infrastructure imbalance. Currently, the universities do not have permanent close cooperation with business in the innovation field. In addition, often they do not raise sufficient revenues from the commercialization of innovations.

The study showed that the range of innovative sectors of the regional economy and the need to introduce innovations should be expanded – it is not only industrial enterprises, but also enterprises of other sectors of the regional economy, since not all regions have industrial orientation – the share of agrarian-industrial sector is high, as well as the share of the construction industry materials sector and the tourism and recreation sector. Innovations should be focused, first of all, on those industries that are drivers of the regional economy as a whole.

To increase the effectiveness of interaction between scientific structures, universities, specific enterprises at the regional level, it is proposed to create the following model: to form a unified database of scientific and technological inquiries of specific enterprises in the region; on their basis, using the results of regional scientific and technical forecasting, to create a database of research topics; to arrange the implementation of priority research works of an innovative nature on a competitive basis; to implement the results obtained and commercialize innovation. The presented model is universal and can be detailed for each region, taking into account its specifics.

The advantage of the proposed model is the openness of the innovation process, as a unified base is formed for not only the inquiries of enterprises, but also for research and development.

Acknowledgements

The article presents the results of studies that are carried out on the topic: "Research and analysis of strategic programs for the economic and industrial development of the regions aimed at working out a set of measures to integrate the results of innovative, scientific and technological activities universities into the economic activities of subjects of the Russian Federation".

References

- [1] Agamirzyan, I. 2010. *Innovative Russia: the time of change. Innovative entrepreneurship: how the venture "ladder" works*. Collected articles. Moscow: OJSC Russian Venture Company.
- [2] Elliott, C., Dewland, J., Martin, J.R., Kramer, S., Jackson Sr, J.J. 2017. Collaborate and Innovate: The Impact of Academic Librarians on the Commercialization of University Technology. *Journal of Library Administration*, 57(1): 36-48. DOI: [10.1080/01930826.2016.1215674](https://doi.org/10.1080/01930826.2016.1215674).
- [3] Engovatova, A.A. 2013. Development of domestic entrepreneurial universities. *Creative Economy*, 4: 4-9.
- [4] Fedorov, M.V., Peshina, E.V., Gredina, O.V., Avdeev, P.A. 2012. Penta Helix - the concept of knowledge production in the innovation economy. *Manager*, 3(4): 4-12.
- [5] Florida, R., Mellander, C., Stolarick, K. 2011. *Creativity and Prosperity: The Global Creativity Index*. Report. Martin Prosperity Institute, Available at: <http://martinprosperity.org/media/GCI%20Report%20Sep%202011.pdf>
- [6] Gladwell, M. 2011. *The Tipping Point: How Little Things Can Make a Big Difference*. Little, Brown & Company, ISBN-10: 0316679070, 288 pp.
- [7] Gruzina, Y.M. 2015a. Analysis of components of the universities' innovative infrastructure. *Humanitarian, Socio-Economic and Social Sciences*, 11(2): 25-28.
- [8] Gruzina, Y.M. 2015b. Innovative infrastructure of Russian universities: analysis and development prospects. *Innovation and investment*, 11: 8-10.
- [9] Guadix, J., Carrillo-Castrillo, J., Onieva, L., Navascués, J. 2016. Success variables in science and technology parks. *Journal of Business Research*, 69(11): 4870–4875. DOI: [10.1016/j.jbusres.2016.04.045](https://doi.org/10.1016/j.jbusres.2016.04.045)
- [10] Ismailov, T.A. and Gamidov, G.S. 2003. Innovative economy - a strategic line of Russia's development in the 21st century. *Innovations*, 1: 43-53
- [11] Kalnins, J.R., Jarohnovich, N. 2016. Dynamic model of entrepreneurial university: Case of Ventspils University College development vision. *Engineering for Rural Development*, 1250-1254. Available at: <http://tf.llu.lv/conference/proceedings2016/Papers/N247.pdf>
- [12] Kasim, N., Shamsuddin, J., Kamaluddin, A., Salman, S.A. 2016. Monitoring system through improved governance and audit: The case of Malaysian public universities. *Proceedings of the 27th International Business Information Management Association Conference - Innovation Management and Education Excellence Vision 2020: From Regional Development Sustainability to Global Economic Growth, IBIMA 2016*; Milan; Italy, pp.1315-1325. International Business Information Management Association
- [13] Lerner J. and Tag J. 2014. Institutions and venture capital. *Industrial and Corporate Change*, 22(1): 153–182. DOI: [10.1093/icc/dts050](https://doi.org/10.1093/icc/dts050).
- [14] Masyuk, N.N. and Petrishchev, P.V. 2015. *International educational alliances in the global economy: a monograph*. Vladivostok: Vladivostok State University of Economics and Service Press.

- [15] Mirolyubova, T.V., Sukhanova, P.A. 2013. Foreign experience of the universities' innovative infrastructure development in the regional innovation systems. *Fundamental Research*, 1 (1): 215-220
- [16] Mosconi, E.M., Piccarozzi, M., Silvestri, C. 2014. "Consumerism and innovation: The starting points for the creation of university spin-off". In: Kaufman, H.R., Panni, M.F.A.K. (Eds.) *Handbook of Research on Consumerism in Business and Marketing: Concepts and Practices*, 310-334 pp. DOI: 10.4018/978-1-4666-5880-6.ch015
- [17] Puffal, D.P., Spricigo, G., Ruffoni, J., Teixeira, R. 2016. The public funds influence for innovation: An analysis of Brazilian University-Industry Interaction. *Proceedings of IAMOT - 25th International Association for Management of Technology Conference, Technology - Future Thinking*, 1754-1768 pp. Available at: http://iamot2016.org/proceedings/papers/IAMOT_2016_paper_242.pdf
- [18] Pukhova M.M., Gruzina Y.M., Kharchilava K.P. 2016. The role of universities innovation infrastructure in the region development in the Russian Federation. *Indian Journal of Science and Technology*, 9(42): 104282. DOI: [0.17485/ijst/2016/v9i42/104282](https://doi.org/10.17485/ijst/2016/v9i42/104282).
- [19] Sawhney, M. and Chen, J. 2010. *Defining and Measuring Business Innovation: The Innovation Radar*. Working Paper. San Antonio: Kellogg School of Management. DOI: 10.13140/RG.2.2.22863.07846
- [20] Scoponi, L., Dias, M.F.P., Pesce, G., Schmidt, M.A., Gzain, M. 2016. Academic cooperation in Latin America for innovation in agribusiness. *Journal of Technology Management and Innovation*, 11(2): 111-120. DOI: 10.4067/S0718-27242016000200011
- [21] Shadrin, A.E., Kuznetsov, E.B., Kniagin, V.N. et al. 2015. *Summary of the report on the activities of the Project Office of RVC OJSC and the Ministry of Economic Development of Russia relating to the development of innovative infrastructure facilities for the period 08.2014-06.2015*. Moscow
- [22] Sood, A., and Tellis, G.J. 2005. Technological Evolution and Radical Innovation. *Journal of Marketing*, 69(3): 152-168. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=903882
- [23] Villasalero, M. 2014. University knowledge, open innovation and technological capital in Spanish science parks: Research revealing or technology selling? *Journal of Intellectual Capital*, 15(4): 479-496. DOI: [10.1108/JIC-07-2014-0083](https://doi.org/10.1108/JIC-07-2014-0083).
- [24] Zhou, W., Li, Y., Hsieh, C.J., Chang, K.C., Kiang, Y.J., Ken, Y. 2016. Research Performance and University-Industry-Government Funding Sources in Taiwan's Technological and Vocational Universities. *Innovation: Management, Policy and Practice*, 18 (3): 340-351. DOI: [10.1080/14479338.2016.1219231](https://doi.org/10.1080/14479338.2016.1219231)
- [25] Zieba, M. 2013. *Knowledge-intensive business services (KIBS) and their role in the knowledge-based economy*. Proceedings of the European Conference on Knowledge Management, ECKM. Available at: ftp://ftp.repec.org/opt/ReDIF/RePEc/gdk/wpaper/WP_GUTFME_A_7_Zieba.pdf
- *** ASI, 2014. National Technology Initiative. Agency for Strategic Initiatives, Available at: <http://asi.ru/eng/nti/>
- *** Development of innovative infrastructure in Russian universities. 2014-2017. Available at: <http://rii-vuz.extech.ru/>
- *** MPI. 2015. The Global Creativity Index 2015 Martin Prosperity Institute. Available at: <http://martinprosperity.org/media/Global-Creativity-Index-2015.pdf>
- *** RF Government Regulation No. 219. 2010. (as revised on 03.06.2011) On State Support of Innovation Infrastructure Development in the Federal Educational Institutions of Higher Professional Education. Available at: <https://smb.novreg.ru/content/legislation/federal/pmisp/m,f,565340/>
- *** RF MES. 2016. Расходы федерального бюджета на развитие образования и науки в 2014-2016 годах. Available at: http://fin.edu.ru/InfoPanel/min_obr1.html

Methodology for Universities Economic Impact Assessment in Central and East Europe Countries

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Suggested Citation:

Dzupka, P., Szlafkaiova, P. 2017. Methodology for universities economic impact assessment in Central and East Europe countries. *Journal of Applied Economic Sciences*, Volume XII, Spring, 3(49): 923– 931.

Abstract:

Universities are considered to be as one of the main drivers of regional development by a number of authors who are convinced of the positive impact of universities on the region. There are a number of methods of quantification the impact of universities on the region. However, due to the unavailability of data, these methods can not be applied to the countries of Eastern and Central Europe. Since the European Commission has not established any comprehensive methodology to analyze the impact of universities on regional level of countries of Central and Eastern Europe it is necessary to derive the data for regional impact analysis from national available data. The article analyzes the theoretical basis and various empirical studies measuring the impact of universities on the region. We also analyze the appropriate method for quantification of the impact, where the Flegg locational quotient was chosen, which is able to quantify the influence of universities in various fields of economic regional development, such as regional employment, added value, of output or income through regional multipliers obtained from national input-output matrix.

Keywords: university impact; economic impact assessment; FLQ; regional multiplier

JEL Classification: C67; I23; R15

Introduction

The article is focused on issue of universities economic impact assessment on regional level. Many empirical studies from this field can be found within the literature, but only few of them are from the Central and East Europe. The reason for this is unavailability of regional multipliers, which are the basic condition for induced (total) economic impact estimation for region.

The aim of this article is to deal with the problem related to the regional multipliers and propose the methodology for economic impact analysis applicable in the Central and Easter EU countries. The main contribution of this article is in describing of theoretical and practical approaches for deriving of regional multipliers from the national input- output matrix.

In the first part, paper describes the theoretical background of EIA of universities on regional level and different types of impacts are discussed. The first group of impacts are the short term impacts, which generates direct, indirect and induced effects within the region. The sum of these impacts gives the overall university short term impact on a region. The second group of impacts are long-term effects related to accumulating knowledge, human capital and attractiveness of the area where the university is located.

The second part describes the five empirical studies for five different universities. For empirical studies of following universities were analyzed: University of Strathclyde in Glasgow, University of Birmingham, University of

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Warwick, Kent University and University of North Carolina. All of the mentioned universities have a different approach to measure its impact (short-term or long-term).

The last part proposes the methodology and it deals with the main differences found between the above-mentioned empirical studies. This part of the paper is describing the most appropriate approach which is devoting the regional multipliers from the regional i-o matrix through Flegg's location quotient, FLQ. The part also deals with the description and application of four types of multipliers, which are the output multiplier, income multiplier; value added multiplier and employment multiplier.

Conclusion

The article discusses the economic impact assessment (EIA) of universities in the region and finding appropriate ways of measuring this impact. This article focuses mainly on Central and Eastern Europe because these countries lack a comprehensive approach to assessing these impacts through regional multipliers.

Many authors have considered the impact of universities on the region and the municipality as a positive, thanks to which the region is becoming a competitive institution, which by increasing the quality of human capital in the region and spillover effects supports the arrival of new companies to the region and helps existing businesses with innovations. For this reason, finding out the economic impact of the university community or region is crucial for obtaining grants and subsidies from the state budget or the budget of the European Union.

EIA is usually used to demonstrate the importance of the university for the community or region in terms of impact on regional output, employment, value added or income. The article discussed the approach to assessing these impacts through regional multipliers derived from national and I-O matrix.

The main advantage of proposed methodology is that it can also be used in countries, where no regional multipliers available. The only need for data is the availability of national I-O matrix and also information about regional employment, regional value added, regional output and finally, the regional income.

Acknowledgement

This paper was developed with the support of APVV-14-0512 supported by the Slovak Research and Development Agency "Universities and economic development of regions – UNIREG".

References

- [1] Bess, R., and Ambargis, Z.O. 2011. *Input-Output Models for Impact Analysis: Suggestions for Practitioners Using RIMS II Multipliers*. New Orleans: 50th Southern Regional Science Association Conference.
- [2] Coughlin, C.C. and Mandelbaun, T.B. 1991. *Consumer's Guide to Regional Economic Multipliers*. St. Louis: Federal Reserve Bank of St. Louis Review, 19-32 pp.
- [3] Drucker, J., Goldstein, H. 2007. Assessing the regional economic development impacts of universities: A review of current approaches. 30 (1): 20-46.
- [4] Džupka, P., Hudec, O. 2008. Hodnotenie dopadov štrukturálnych fondov na regionálnej úrovni s využitím modelu HERMIN. *Regionálni Studia*. 1 (1).
- [5] Felsenstein, D. 1996. The university in the metropolitan area: impacts and public policy implications. *Urban Studies*, č.33. 1565-1580 pp.
- [6] Flegg, A.T. Tohmo, T. 2008. *Regional Input-Output Models and the FLQ Formula: A Case Study of Finland*. Bristol. Department of Accounting, Economics and Finance, Bristol Business School, University of the West of England.
- [7] Flegg, A.T. and Webber, C.D. 1997. On the appropriate use of location quotients in generating regional input-output tables: Reply. *Regional Studies*. 31 (8).
- [8] Flegg, A.T. and Webber, C.D. 2000. Regional Size, Regional Specialization and the FLQ Formula, *Regional Studies*, 36 (6): 563-569
- [9] Husár, J., Mokrášová, V., Goga, M. 2001. *Input-output analýza a systém národných účtov*. Bratislava: Ekonóm, ISBN: 80-225-1349-0, 225 pp.
- [10] Jaffe, A. 1989. Real Effects of Academic Research. *The American Economic Review*. 79(5): 957-970.
- [11] Kowalewski, J. 2012. *Regionalization of national input-output tables: empirical evidence on the use of the FLQ formula*. Hamburg. Hamburg Institute of International Economics (HWWI), HWWI Research Paper, 126.

- [12] Kronenberg, T. 2011. *Regional input-output models and the treatment of imports in the European System of Accounts*. Jahrb Reg Wiss 32: 175. DOI:10.1007/s10037-012-0065-2
- [13] Kronenberg, T. 2009. Construction of Regional Input - Output Tables Using Nonsurvey Methods: The Role of Cross - Hauling. *International Regional Science Review*, 32 (1): 40-64.
- [14] Luger, M. et al. 2001. *The Economic Impact of the UNC System on the State of North Carolina*. s.l. Office of Economic Development.
- [15] Mccann, P., and Dewhurst, J.H.L.L. 1998. Regional Size, Industrial Location and Input-Output Expenditure Coefficients. *Regional Studies*, 32 (5).
- [16] McLennan, W. 2006. *Informaiton Paper:Australian National Accounts: Itroduction to Input-Output Multipliers*. Canberra Australian Bureau of Statistics.
- [17] Pavlovičová, S. 2010. *Regionálne modely ekonomiky SR pre potreby projekcií a simulácií*. Bratislava: Ekonomická Univerzita v Bratislave - Fakulta hospodárskej informatiky, Dizertačná práca.
- [18] Raabová, T. 2011. *Návrh certifikované metodiky pro výpočet ekonomických dopadů kulturní organizace*. Praha : Institut umění – Divadelní ústav
- [19] Raabová, T. 2010. *Multiplikacní efekty kulturních odvetví v České republice*. Praha s.n.
- [20] Reháč, Š., et al. 2015. *Lokálne ekonomické vplyvy univerzít*. Bratislava : Ekonóm., ISBN 978-80-225-4007-0.
- [21] Vavrla, L., a Rojíček, M. 2005. *Sestavování symetrických input-output tabulek a jejich aplikace*. Praha : Vysoká škola ekonomická v Praze, Katedra ekonometrie
- [22] Výrostová, E a Výrost, T. 2007. *Measuring the role of universities in regional development. Proceedings of 2nd Central european Conference in Regional Science - CERS, October 10-13, 1141 – 1149 pp.*
- [23] Výrostová, E. 2008. *Vzťah univerzity a regiónu v ktorom pôsobí: pohľad na stratégiu univerzít*. s.l. : UPJŠ. Katedra ekonomických vied, Fakulta verejnej správy. Available at: <http://www3.ekf.tuke.sk/konfera2008/zbornik/files/prispevky/vyrostova.pdf>.
- *** Biggar Economics. 2013. *University of Strathclyde Economic Impact Study*. Midlothian: s.n.
- *** Impact studies of University of Kent. 2014. *50th Anniversary. Regional impact: making a difference*.
- *** Impact studies of University of Warwick. 2013. *Your area - Our impact*.
- *** NWT Bureau of Statistics. 2006. *NWT Input-Output Model*. s.l. Government of the Northwest Territories
- *** Oxford Economics. 2013. *The impact of the University of Birmingham*

The Labor Migration in the Context of Value Orientations of Russian Youth

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Suggested Citation:

Ustinkin, S. 2017. The labor migration in the context of value orientations of Russian Youth, *Journal of Applied Economic Sciences*, Volume XII, Spring, 3(49): 932– 938.

Abstract:

The paper deals with the problem of perception of migrant workers in host societies. Active migration flows and growing intercultural interaction have determined the need for the optimization of labor migrants' socio-cultural environment. It is impossible to accomplish without public attitudes monitoring. In this regard, the youth aged 18-24 was surveyed. Empirically obtained results of questionnaires for students (n=5 355) have proved our assumption that majority of young people associate the growing of number of labor migrants with the adverse consequences for socio-economic life. Thus, 38,5% have a negative attitude to migrant workers in general. More than half of respondents supported the complication of legislation for labor migrants, which is combined with the current trends of reforms in migration policy in European countries. In summary, we suppose that attitude of the young indigenous population to migrant workers has a proclivity to develop into the problems of internal interethnic relations and marginalization.

Keywords: migration; socio-cultural environment; youth values determination; rejection of labor migrants; Russian Federation.

JEL Classification: O15.

Introduction

In the context of expanding globalization, the problem of coexistence of diverse cultures has become more urgent (Killen and Wainryb 2000). Two main causes that determine such situation can be identified. Firstly, there is multinational composition of countries (Gordienlo 2014); secondly – constantly growing migration flow (Vezzoli, Villares-Varela, and Haas 2014).

At present moment, Russia is a center of Eurasian migration system (Tarr 2016). It is interested in consolidation in the post-Soviet space and considers interaction with CIS countries as a priority of own migration policy (Ivakhnyuk 2006, Ryazantsev *et al.* 2015). Emphasis is placed on the fact that immigrants would be able to solve economic problems (Denisova 2014).

Actually, attracting of labor migrants can minimize the deficit in highly qualified personnel (Castles 2000). Although, this may entail negative consequences in the form of lower wages for local workers, or increase the level of unemployment (Stark and Bloom 1985). In this regard, Asian governments have set a minimum remuneration for foreign employees (Balch 2010) and have created special departments or agencies to manage labor emigration, such as the Bureau of Manpower, Employment and Training in Bangladesh, or the Office of the Protector of Emigrants within the Ministry of Labor in India.

At the same time, European and Australian authorities actively implement reforms aimed at selecting certain migrants (Hollifield, Martin, and Orrenius 2014). Russian laws complicating the legalization for migrant workers from CIS countries with visa-free entry to Russia came into force on January 1, 2015. Therefore, citizens of Uzbekistan and Tajikistan will be able to travel to Russia only by foreign passports, not by internal passports or equivalent documents (Tkach and Bredikova 2016).

The significant increase in the number of immigrants in Russia, which ranges from 6 to 6,5 million in first half of 2016, leads to the emergence of new social conflicts (Vakulenko and Leukhin 2016). That is why we define

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the rejection of labor migrants by nationals in host countries as an acute question. We examined young nationals as a special category because of the critical level of opposition to other values.

The optimization of such situation is frequently considered by scholars in the context of multiculturalism (Green and Staerklé 2013). We can note that multiculturalism differs from the model of cultural unity that was a characteristic of the 20th century, when the culture of ethnic majority had dominated and ethno-cultural minorities were assimilated or absorbed as a subcultural community (Kymlicka 2012). Thus, it is directed to providing equal opportunities for members of society in all spheres of life (Pakulski and Markowski 2014). It means that the participants of intercultural interaction enter the process of communication with different communicative expectations that are determined by the peculiarities of their native culture and stereotypes that influence their assessment of the partners from other cultures (Vertovec 2010).

We understand marginal culture as a special kind of subculture that has its own specific features. Unlike titular communities that are characterized by the openness of communication, marginal groups lead a secluded life, either not integrating at all or integrating slightly into the socio-cultural environment of their host country. Emotional depression, hidden aggression and inaction strengthen a polarization of world perception (friends and foes) and make social tension that can be hidden or open much deeper (Kretsedemas 2013).

It should be taken into the account that language barrier also breaks communicative links with the social environment in which they live and forms a negative attitude to the outside world because it is perceived as foreign and hostile. Lack of language skills creates not only cultural-communicative, speech and psychological barriers for full social and professional interaction within the legal framework of society. Language barrier serves as basis for conservation of closed ethnic groups that for some reason found themselves in conditions of "forced intercourse" with the representatives of other ethnic groups, authorities and employers (Toffler 2002).

We see the formation of a new social space full of various cultural codes, symbols, meanings that constitute eclectic or "mosaic" culture minimizing opportunities for cultural dialogue. According to N. Luhmann, new forms of sociality that appear under such circumstances are directed not to interpersonal interpenetration but to pragmatic orientation. Such state of a person is typical for both the host country and migrants. Closed communication space of local societies provides migrants with unity of language, preservation of traditions and norms of communication, peculiarities of domestic culture and limits their integration into cultural-communicative space of titular nations (Aronin and Singleton 2012).

Due to some objective circumstances, large numbers of migrants form social groups that appear outside positively oriented social systems – schools, higher educational establishments, social organizations, political parties, labor unions etc. Under the conditions of semi-legal existence, groups of migrants form their own social systems, the life style of which often contradicts moral and legal regulation of social processes (Rios 2011).

However, modern forms of transport and communication make it possible for labor migrants and their descendants to maintain long-term links with the ancestral homeland (McLaren 2012). This becomes the basis of transnational development of communities.

The countries, which receive immigrants, have been able to cope with this situation more easily, since absorption of immigrants has been part of their myth of nation building. However, this mainly applies to European countries (Kolst 2014).

It is pertinent to point out that the key question for Russia is whether immigration will lead to settlement, formation of ethnic communities, and new forms of cultural diversity. Whatever the policies of the government are, they may cause adverse reactions of certain types of the population. The world experience of the last 10 years shows that youth perceive the newcomers as the cause of insecurity (Edge and Newbold 2013, Testé *et al.* 2012, Lavrič *et al.*, n.d.).

Moreover, migrants may be seen by society as a danger to public cohesion. It can be confirmed by the expansion of European extreme-right parties establishing anti-immigrant campaigns (Art 2011) and by the policies for large-scale deportations during the Asian Crisis in 1997-1999 (Castles and Miller 2009).

Whereas nearly quarter of the Russian population is under the age of 25, we suppose that the question of attitude of young indigenous population to migrant workers has a tendency to develop into the problem of interethnic relations inside the country.

Discussion and conclusion

Obtained results confirm the aggravation of the marginalization issue. Within the cultural approach, this term is examined as a consequence of migration and intercultural interaction (Park 1928). In this regard, (Durkheim, Lukes, and Halls 2014) had noted the complex processes of cultural interaction, especially among young people of both migrant and titular nations, revealing the problem of social anomie.

Numerous forms of deviant behavior appear in groups of migrants due to the poverty, low level of education, rejection of cultural standards of the host country (Savrutskaya, Nikitin, and Semenov 2014). Thus, so-called "effect of the third generation" in France in 2005-2006 shows that the problems of migration, marginalization and anomie are poorly studied (Claire, Laitin, and Valfort 2014).

In the countries of Western Europe, the ideas of multiculturalism have been used as a methodological basis for setting out principles of migration policy in accordance with the traditions of liberalism and democracy. However, as leading politicians of these states confessed, this policy did not reduce tension in interethnic relations (Locke and Bailey, *n.d.*).

Goss and Lindquist (1995) had developed the theory of structuration to international labor migration using case study material from the Philippines. Later their achievements were used to study migration processes in Poland (Szewczyk 2015) and Vietnam (Hoang and Yeoh 2015).

Determining the attitude of students to labor migrants in Russia we rely on the psychosemantical approach (Petrenko 2010). It implies that the perception of representatives from different ethnic or social groups provides the usage of differentiation mechanism. Thus, the poll conducted by the Institute of Sociology and the Center for Ethno-Political and Regional Studies of Russian Federation, which covered 11.864 respondents, showed that 16% of the surveyed were hostile towards migrants who came only to work and did not intend to live in Russia permanently (Mukomel 2011).

It can be assumed that such public attitudes as well as devaluation of the ruble partially caused cautious relation of citizens of the Baltic States to the prospects of working in Russia (Denisova 2014) and also the interest of the nationals of Georgia and Azerbaijan in employment in Western countries (Yunusov 2013).

Presently, the flow of workers coming to the country consists mostly of representatives of the CIS countries (Uzbekistan, Tajikistan, and Ukraine) and China. The citizens of Germany, Great Britain and the United States dominate among the highly qualified foreign specialists (Labor and Employment in Russia, 2013). Therefore, the potential of labor migration is still large.

International events connected with the outbreaks of ethnic and religious conflicts in Karelia, in Manezhnaya Square in Moscow, in Birulevo and Arzamas in Nizhegorodsky region have proven that there is certain tension in the sphere of international relations among youth (Dafflon, *n.d.*). Evidently, these problems are connected with the attitude of the rising generation towards migrants, including labor migrants, and they should be sorted out. The problem of coexistence of diverse cultures identifies the need to examine public opinion on labor migrant flows. The views of youth are of special interest.

The poll showed that 38,5% of young people have a negative attitude to the labor migrants on the territory of Russia, while the positive indicators constituted 37,1%. The main causes of the newcomers' rejection are associated with the possible growth of crime rates, inter-ethnic conflicts and reduction of *the number of jobs for the host country nationals*. Therefore, more than half of students were in favor of legislative changes that would complicate the being of migrant workers in Russian Federation. 515 respondents had willingness to express position on the problem of labor migrants by rallies, demonstrations, pickets, and other protest actions. 38,7% of surveyed are ready to do this through Internet forums, blogs and social networks.

The submissions may be useful for the following research on marginalization, multiculturalism, interaction of migrant and titular nations, convictions of youth, and problems of social anomie.

References

- [1] Adida, C., Laitin, D., and Valfort, M-A. 2014. Muslims in France: Identifying a discriminatory equilibrium. *Journal of Population Economics*, 27 (4): 1039-1086.

- [2] Aronin, L., and Singleton, D. 2012. *Multilingualism*. Volume 30. IMPACT: Studies in Language and Society. Amsterdam: John Benjamins Publishing Company. DOI:10.1075/impact.30
- [3] Art, D. 2011. *Inside the Radical Right: The Development of Anti-Immigrant Parties in Western Europe* Cambridge University Press, ISBN-10: 1139498835, ISBN-13: 978-1139498838.
- [4] Balch, A. 2010. Managing Labour Migration in Europe: Ideas Knowledge and Policy Change. Center for Comparative Immigration Studies, Working Paper 184. Available at: https://ccis.ucsd.edu/files/wp_184.pdf
- [5] Castles, S., Miller, M. 2009. Migration in the Asia-Pacific Region | Migrationpolicy.org. Available at: http://www.adapttech.it/old/files/document/1853MIS_IMM_10LUGLIO.pdf
- [6] Castles, S. 2000. International Migration at the Beginning of the Twenty-First Century: Global Trends and Issues. *International Social Science Journal*, 52: (165): 269–81. DOI:10.1111/1468-2451.00258
- [7] Dafflon, D. n.d. *Youth in Russia -The Portrait of a Generation in Transition A Research Report by the Swiss Academy for Development*.
- [8] Denisova, G. 2014. Modern Migration Trend in the South of Russia: A New Challenge? *The Russian Academic Journal*, 29 (3).
- [9] Durkheim, É., Lukes, S., Halls, W.D. 2014. *The Division of Labor in Society*. Free Press. Available at: http://s3.amazonaws.com/academia.edu.documents/40907961/Durkheim_Emile_-The_Division_of_Labour_in_Society.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1497833803&Signature=6UGoJs3F22u4EU7Y4jPBa5ILFmU%3D&response-content-disposition=inline%3B%20filename%3DDurkheim_Emile_The_Division_of_Labour_in_Society.pdf
- [10] Edge, S., and Newbold, B. 2013. Discrimination and the Health of Immigrants and Refugees: Exploring Canada's Evidence Base and Directions for Future Research in Newcomer Receiving Countries. *Journal of Immigrant and Minority Health*, 15 (1):141–48. DOI:10.1007/s10903-012-9640-4
- [11] Gordienlo, A. 2014. *Challenges of the Implementation of Multiculturalism Policy in the Era of Globalization: Global and Ukrainian Scientist Prospects*.
- [12] Goss, J., and Lindquist, B. 1995. Conceptualizing International Labor Migration: A Structuration Perspective. *International Migration Review*, 29 (2): 317. DOI:10.2307/2546784
- [13] Green, E.G.T., and Staerklé, C. 2013. *Migration and Multiculturalism*. Oxford University Press, 2: 852–89.
- [14] Hoang, L.A. and Yeoh, B.S.A. 2015. Transnational Labour Migration, Debts and Family Economics in Vietnam. In *Transnational Labour Migration, Remittances and the Changing Family in Asia*, 283–310. London: Palgrave Macmillan UK. DOI:10.1057/9781137506863_11.
- [15] Hollifield, J.F, Martin, P.L., and Orrenius, P.M. 2014. *Controlling Immigration : A Global Perspective*, Stanford University Press, ISBN: 978-0-8047-8735-2 (electronic).
- [16] Ivakhnyuk, I. 2006. *Migrations in the CIS Region: Migrations in the CIS Region: Common Problems and Mutual Benefits*, International Symposium on International Migration and Development Population Division Department of Economic and Social Affairs United Nations Secretariat Turin, Italy, 28-30 June 2006. Available at: http://www.un.org/esa/population/migration/turin/Symposium_Turin_files/P10_SYMP_Ivakhniouk.pdf
- [17] Killen, M., and Wainryb, C. 2000. Independence and Interdependence in Diverse Cultural Contexts. *New Directions for Child and Adolescent Development* 2000 (87): 5–21, Wiley Subscription Services, Inc., A Wiley Company. DOI:10.1002/cd.23220008703.
- [18] Kolsto, P. 2014. *Strategies of Symbolic Nation-Building in South Eastern Europe (Hardback)* - Routledge. Routledge, ISBN-10: 1317049357, ISBN-13: 9781317049357, 300 pp.
- [19] Kretsedemas, P., Capetillo-Ponce, J., Jacobs, G. 2013. *Migrant Marginality : A Transnational Perspective*,

Routledge, ISBN-10: 1135921601, ISBN-13: 9781135921606, 374 pp.

- [20] Kymlicka, W. 2012. "Multiculturalism: Success, Failure, and the Future | Migrationpolicy.org." Migration Policy Institute Europe, 32 pp.
- [21] Lavrič, M., Flere, S., Tavčar Krajnc, M., Klanjšek, R., Musil, B., Naterer, A., Kirbiš, A., Divjak, M., and Lešek, P. n.d. "YOU- TH 2010 *The Social Profile of Young People in Slovenia Republic of Slovenia Ministry of Education and Sports Office for Youth Aristej Publishing House*, 628 pp.
- [22] Locke, D.C., and Bailey, D.F. 2013. *Increasing Multicultural Understanding*, 3rd Edition, SAGE Publications, ISBN-10: 1483314219, ISBN-13: 9781483314211, 352 pp.
- [23] McLaren, L.M. 2012. The Cultural Divide in Europe: Migration, Multiculturalism, and Political Trust. *World Politics*, 64 (2) : 199–241, Cambridge University Press. DOI:10.1017/S0043887112000032
- [24] Mukomel, V. 2011. Integration of Migrants: Challenges, Policies, Social Practices. *Universe of Russia*, 20(1): 34–50.
- [25] Pakulski, J., and Markowski, S. 2014. Special Issue: Migration and Multiculturalism: Australia and Europe Guest Editors: Jan Pakulski and Stefan Markowski."
- [26] Park, R. E. 1928. Human Migration and the Marginal Man. *American Journal of Sociology*, 33(6): 881–93. University of Chicago Press. DOI:10.1086/214592
- [27] Petrenko, V. 2010. *Fundamentals Psychosemantics. 3rd Edition / Osnovy psikhosemantiki. 3-e izd. (Russian)* Hardcover, Exmo, ISBN-10: 5699382879, ISBN-13:978-5699382873
- [28] Rios, V. 2011. *Security Issues and Immigration Flows: Drug-Violence Refugees, the New Mexican Immigrants*.
- [29] Ryazantsev, S.V., Karabulatova, I.S., Ter-Akopov, A.A., Pismennaya, E.E., and. Bozhenko, V.V. 2015. The Specificity of the Differential Regulation of Economic Integration in the Context of Contemporary Labor Migration. *Mediterranean Journal of Social Sciences*, 6 (3): 96.
- [30] Savrutskaya, E., Nikitin, A., and Semenov, D. 2014. Moral Conflict and Value System of the Youth. Available at: <http://sgemsocial.org/ssgemlib>
- [31] Stark, O., and Bloom, D. 1985. The New Economics of Labor Migration. *American Economic Review*, 75 (2): 173–78, American Economic Association.
- [32] Szewczyk, A. 2015. European Generation of Migration': Change and Agency in the Post-2004 Polish Graduates' Migratory Experience. *Geoforum*, 60 (March): 153–62. DOI:10.1016/j.geoforum.2015.02.001
- [33] Tarr, D.G. 2016. The Eurasian Economic Union of Russia, Belarus, Kazakhstan, Armenia, and the Kyrgyz Republic: Can It Succeed Where Its Predecessor Failed? *Eastern European Economics*, 54 (1): 1–22. DOI:10.1080/00128775.2015.1105672
- [34] Testé, B., Maisonneuve, C., Assilaméhou, Y., and Perrin, S. 2012. *What Is an 'appropriate' Migrant? Impact of the Adoption of Meritocratic Worldviews by Potential Newcomers on Their Perceived Ability to Integrate into a Western Society. European Journal of Social Psychology*, 42 (2): 263–68. DOI:10.1002/ejsp.1844
- [35] Tkach, O., and Bredikova, O. 2016. *Labour Migration and the Contradictory Logic of Integration in Russia*.
- [36] Toffler, A. 1980. *The Third Wave*, Morrow, ISBN-10: 0688035973, ISBN-13: 978-0688035976, 544 pp.
- [37] Vakulenko, E., and Leukhin, R. 2016. Whether the Foreign Workers Are Discriminated in the Russian Labor Market? *Economic Policy* 1. Russian Presidential Academy of National Economy and Public Administration.
- [38] Vertovec, S. 2013. *Anthropology of Migration and Multiculturalism: New Directions*, Routledge, ISBN-10: 1317989309, ISBN-13: 978-1317989301, 224 pp.

- [39] Vezzoli, S., Villares-Varela, M., and de Haas, H. 2014. *Uncovering International Migration Flow Data: Insights from the DEMIG Databases*. IMI Working Paper Series 88.
- [40] Yunusov, A. 2013. *Integration in Azerbaijan's Migration Processes*, Carim East – Consortium for Applied Research on International Migration. Available at: http://www.carim-east.eu/media/CARIM-East_RR-2013-09.pdf

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of Applied Economic Sciences

ISSN 2393 – 5162

ISSN - L 1843-6110