Olha O. Kravchenko
Doctor of Economics
 State University of Infrastructure and Technology
 04071, Ukraine, Kyiv, Kyrylivska str., 9
 E-mail: kravch.olha@gmail.com

Analysis of the financial risks of the ukrainian railway transport
 Section: *Problems of economy of industrial enterprises and manufacturing complexes*
 Ekon. promisl. 2017, 80(4): 47-62
 Language: English
 Abstract | Full text (PDF)
 DOI:
 Abstract: **The object of the paper is the financial risks of the railway transport. Today the financial situation of Ukraine's railway transport tends to deteriorate due to the systemic crisis of the national economy, the severance of existing economic ties, the critical wear and tear on non-negotiable assets, as well as an ineffective financial management. This led to the complexities of the formation of sufficient financial resources, the growth of financial risks and, as a result, the reduction of the international ratings. It is shown that little attention is paid to the risks, arising in the course of operating activities in the JSC Ukrzaliznytsia.**
The paper analyzes financial risks of Ukrainian railway transport (financing of operating activities, liquidity, interest, credit and currency). The analysis showed that the industry is facing problems related to the financing of operating activities, providing the necessary level of liquidity and, consequently, the cost of the resources involved. This leads to a decrease in the ability of Ukrzaliznytsia to carry out the operational activities, reduce its effectiveness and, as a result, further deterioration of the financial condition.
In order to improve the financial situation and reduce the financial risks of railway enterprises, the directions of their reduction are offered: optimization of the structure of financial resources by reducing the share of borrowed funds, limiting the amount of high-risk financial transactions, limiting the volume of current assets in the form of low liquid and illiquid assets, rationalizing the policy of managing financial instruments, implementation of scientifically sound financial management system. The strategy and tactics for managing financial risks of the railway enterprises should be based on the balance between expected benefits and possible risks.
Keywords: financial condition, financial resources, financial risk, analysis, railway transport.
 JEL code: G 320, G 390, L 920
References
 1. Analysis of World Experience in the Development of Industry and Approaches to the Digital Transformation of the Industry of the Member States of the Eurasian Economic Union: Informational and Analytical Report (2017). Moscow: Eurasian Economic Commission [in Russian].

Byelyakov, K.I. (2008). Informati-zation in Ukraine: Problems of organiza-tional, Legal and Scientific Support: mono-graph. ?yiv: KVIC [in Ukrainian].
 3. Vasilenko, V. (2013). Technological Modes in the Context of the Aspiration of Economic Systems to the Ideal. Sotsial'no-ekonomichni problemy i derzhava, 1, Vol. 8, pp. 65-72 [in Russian].
 4. Voronin, A.V. (2013). Modeling of Technical Systems. Tomsk: Tomsk Poly-technic University [in Russian].
 5. Glazev, S.Yu. (2012). The Modern Theory of Long Waves in the Development of the Economy. Ekonomicheskaya nauka sovremennoy Rossii, 2 (57), pp. 8-27 [in Russian].
 6. Gromova, T. Will the world survive the fourth industrial revolution? Delovaya stolitsa. Retrieved from <http://fastsalttimes.com/sections/obzor/522.html> [Accessed 07 Oct. 2017] [in Russian].
 7. "Digital Dividends" World Devel-opment Report (2016). Washington: Interna-tional Bank for Reconstruction and Devel-opment / World Bank [in Russian].
 8. Dyuzhev, D.V. (2008). The Specifics of Information Society Formation in Ukraine: History and Modernity. Nauka. Relihiya. Suspil'stvo, 2, pp. 130-135 [in Russian].
 9. The Law of Ukraine "On the Basic Principles of the Development of the Infor-mation Society in Ukraine for 2007-2015" (2007). Uryadovyy kur"yer, 28 [in Ukrainian].
 10. Information Technologies in Ukraine: The Colossus on Clay Feet. Retrieved from <https://dou.ua/lenta/articles/it-in-ukraine/> [Accessed 07 Oct. 2017] [in Russian].
 11. Information Technologies as the Stimulus for the Development of Ukrainian Society. Retrieved from <http://data.ngorg.od.ua/ru/informacionnye-tehnologii-kak-stimul-razvitiya-ukrainskogo-obshchestva> [Accessed 11 Sept. 2017] [in Russian].
 12. Kaplan, A.V., Kaplan, V.E., Mas-chenko, M.V., & Ovechkina, E.V. (2007). The Solution of Optimization Tasks in the Economy. Moscow: Fenix [in Russian].
 13. Kupriyanovskiy, V.P., Namiot, D.E., & Sinyagov, S.A. (2016). Cyber-Physical Systems as the Basis of the Digital Economy. International Journal of Open Information Technologies, 2, Vol. 4, pp. 18-25 [in Russian].
 14. Kupriyanovskiy, V.P., Sinyagov, S.A., Namiot, D.E., Utkin, N.A., Nikolaev, D.E., & Dobryinin, A.P. (2017). Transformation of Industry in the Digital Economy ♦ Design and Manufacturing. International Journal of Open Information Technologies, 1, Vol. 5, pp. 50-70 [in Russian].
 15. Paklin, N.B., & Oreshkov, V.I. (2009). Business Intelligence: from Data to Knowledge. St. Petersburg: Peter [in Russian].
 16. The Portrait of a Ukrainian IT professional. Retrieved from <https://dou.ua/lenta/articles/portret-ukrainskogo-it-specialista/> [Accessed 19 Sept. 2017] [in Russian].
 17. "Industry 4.0": Creation of a Digital Enterprise. The Main Results of the Research in the Metallurgical Industry/ PwC. Retrieved from https://www.pwc.ru/ru/mining-and-metals/publications/assets/industry-4-metals-key-findings_rus.pdf [Accessed 28 Sept. 2017] [in Russian]
 18. Distributed data processing using Hadoop. IBM, 2017 [in Russian].
 19. Romanchuk, Ya. Third industrial revolution: essence, influence, consequences. Retrieved from <http://liberty-belarus.info/o-kapitalizme/kapitalizm-dlya-lyuboznatelnykh/item/848-tretya-promyshlennaya-revolutsiya-sut-vliyanie-posledstviya#l2> [Accessed 25 Aug. 2017] [in Russian].
 20. State, Problems and Prospects of the Development of the Information Society in the CIS. (2012).Commonwealth of Inde-pendent States. Executive committee. Moscow [in Russian].
 21. Trofimova, E. (2016). Cyber Vulnerability of the Smart Manufacturing. ?ontrol ?ngineering Rossiya, 1 (61), pp. 34-36 [in Russian].
 22. Chekletsov, V. (2015). The Fourth Revolution: Internet of Things. Ekspert, January, pp. 42-44. Retrieved from <http://www.ncca.ru/file?Files&141> [Accessed 08 Sept. 2017]. [in Russian].
 23. Sheer, A.-V. What♦s Behind the Term "Industry 4.0". Retrieved from

<http://www.i-love-bpm.ru/s%D1%81heer/chto-skryvaetsya-za-terminom-industriya-40> [Accessed 08 Sept. 2017]. [in Russian].
 24. Atzori, L., Lera, A., & Morabito, G. (2010). The internet of things: a survey. Computer Networks. ????? ??????:
https://www.researchgate.net/profile/Luigi_Atzori2/publication/222571757_The_Internet_of_Things_A_Survey/links/546b36df0cf2f5eb180914e5/The-Internet-of-Things-A-Survey.pdf
 [Accessed 28 Sept. 2017].
 25. Auschitzky, E., Hammer, M., & Rajagopaul, A. How big data can improve manufacturing. McKinsey. ????? ??????:
<http://www.mckinsey.com/business-functions/operations/our-insights/how-big-data-can-improve-manufacturing> [Accessed 28 Sept. 2017].
 26. Brynjolfsson, E., & McElheran, K. Data in Action: Data-Driven Decision Making in U.S. Manufacturing. ????? ??????:
http://www.economics.cornell.edu/sites/default/files/files/events/Brynjolfsson_McElheran_AEA_2016.pdf [Accessed 25 Aug. 2017].
 27. Dymola for physical modelling and simulation using Modelica. Claytex. ????? ??????: <http://www.claytex.com/products/dymola/>
 [Accessed 28 Sept. 2017].
 28. Fishwick, P. (2007). Handbook of Dynamic System Modeling (Chapman & Hall/CRC Computer and Information Science Series). New York: Chapman and Hall/CRC.
 29. Geisberger, E., & Broy, M. (2012). Agenda CPS: Integrierte Forschungsagenda Cyber-Physical Systems (acatech STUDIE) (German Edition). New York: Springer-Verlag, 297 p.
 30. Gröer, C., Niedermann, F., & Mitschang, B. (2012, July) Data Mining-driven Manufacturing Process Optimization. Proceedings of the World Congress on Engineering (Vol. III, pp. 1475-1481). London: WCE.
 31. Hermann, M., Pentek, T., & Otto, B. (2016). Design Principles for Industrie 4.0 Scenarios. 49th Hawaii International Conference on System Sciences (HICSS), pp. 3928-3937.
 32. Hu, H., Wen, Y., Chua, T.-S., & Li, X. (2014). Toward Scalable Systems for Big Data Analytics: a Technology Tutorial. IEEE Access, 2, pp. 652-687.
 33. Industrie 4.0 ♦ What is it? Germany Trade & Invest. ????? ??????:
<https://industrie4.0.gtai.de/INDUSTRIE40/Navigation/EN/Topics/Industrie-40/what-is-it.html> [Accessed 08 Sept. 2017].
 34. Information Resources Management Association. The Internet of Things: Breakthroughs in Research and Practice (2017). Information Resources Management Association. Hershey: IGI Global.
 35. Innovationen für die Produktion von morgen. ????? ??????:
https://www.bmbf.de/pub/Industrie_4.0.pdf [Accessed 08 Sept. 2017].
 36. Jeschke, S., Brecher, C., Song, H., & Rawat, D. (2017). Industrial Internet of Things. Cybermanufacturing Systems. Herausgeber: Springer International Publishing Switzerland.
 37. Kim, K., Jung, J.-K., & Choi, J.-Y. (2016). Impact of the Smart City Industry on the Korean National Economy: Input-Output Analysis. Sustainability, 8 (7), pp. 649-678.
 38. Lasi, H., Kemper, H.-G., Fettke, P., Feld, T., & Hoffmann, M. (2014). Industry 4.0. Business & Information Systems Engineering, 4 (6), pp. 239-242.
 39. Lee, J., Lapira, E., Bagheri, B., & Kao, H. (2013). Recent advances and trends in predictive manufacturing systems in big data environment. Manufacturing Letters, 1, pp. 38-41.
 40. Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., & Hung Byers, A. (2011). Big data: The next frontier for innovation, competition, and productivity. New York: McKinsey Global Institute.
 41. ♦Nedelcu, B. (2013). About Big Data and its Challenges and Benefits in Manufacturing. Database Systems Journal, 4, Issue 3, pp. 10-19.
 42. ♦Networked Readiness Index (2015). ????? ??????:
<http://reports.weforum.org/global-information-technology-report-2015/economies/#indexId=NRI&economy=UKR> [Accessed 25 Aug. 2017].
 43. ♦Nonaka, Y. Suginishi, Y., Lengyel, A., & Katsumura, Y. (2015, August) The S-Model: A digital manufacturing system combined with autonomous statistical analysis and autonomous

discrete-event simulation for smart manufacturing. IEEE International Conference on Automation Science and Engineering (CASE) (pp. 1006-1011). Gothenburg: IEEE.
 44. Reimann, M., & Ruckriegel, C. (2017). Road2CPS Priorities and Recommendations for Research and Innovation in Cyber-Physical Systems. Stuttgart: Steinbeis-Editions.
 45. Saraee, M. How can companies start implementing the Smart Industry concept? ?????? ??????: https://www.smart-industry.nl/site/assets/files/2158/how_can_companies_start_implementing_the_smart_industry_concept.pdf [Accessed 08 Sept. 2017].
 46. Smart Enterprise demo for manufacturing. Pharaos Navigator. ?????? ??-?????: <https://enterprise.win2biz.com/static/content/en/525/Explaining-Enterprise-Model.html> [Accessed 08 Sept. 2017].
 47. ♦The 2016 IMD World Competitiveness Scoreboard. ?????? ??????: <http://www.imd.org/globalassets/wcc/docs/scoreboard-2016.pdf> [Accessed 08 Sept. 2017].
 48. Yin, S., & Kaynak, O. (2015). Big Data for Modern Industry: Challenges and Trends. Proceedings of the IEEE, 2 Vol. 103, pp. 143-146.
 49. Zaitsev, D.A. (2012). Universal Petri Net. Cybernetics and Systems Analysis, Vol. 48, Issue 4, pp. 498-511.
 50. Zhou, Z., Xie, S., & Chen, D. (2012). Fundamentals of Digital Manufacturing Science. London: Springer-Verlag London Limited.