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**Table of Content**

Product Domestication Process Perceived by End-Users..... <i>Andrei DUMITRESCU and Mihail PURCAREA</i>	1
Multidimensional Comparative Analysis and Forecasting of Unemployment in The USA for 2021 In the Aspect of Economic Security..... <i>Szymon MITKOW and Bartosz KOZICKI</i>	8
Analysis of Global Population and Fatalities Caused by Air Pollution..... <i>Bartosz KOZICKI</i>	16
What don't you know about Attitudes towards Facebook? Overview of the Algerian Context..... <i>Allal MOKEDDEM</i>	29
Study and Analyzing an Effective SQL Queries Optimization in SAP ERP and S/4 HANA Systems..... <i>Marek GAŁĄZKA</i>	47
Analysis of The Impact of ICT Into Condominium Management. Scientific Literature Review 2015 – 2020. <i>Dolly B. ASTO AGUILAR, Jamil G. BELEN BARRETO and Liset S. RODRIGUEZ BACA</i>	55
Analysis of The Use of ITIL Methodology for Service Management: A Review of The Scientific Literature of the 2015 – 2020..... <i>Estefanny L. CONDORI CUCCHI and Liset S. RODRIGUEZ BACA</i>	69
Corporate Social Responsibility Initiatives during the Covid-19 Pandemic: The Effect of CSR Motives Attributions on Advocacy..... <i>Tengku Ezni BALQIAH, Fanny MARTDIANTY, Rifelly Dewi ASTUTI and Mutia Nurazizah RACHMAWATI</i>	80
Game-Based Learning and Gamification – Case Study ``Covering all the Information the Partnership Gained from the Project``..... <i>Paulina SPANU, Jose Alberto LENCASTRE, Marco BENTO, Gulden ILIN and Panos MILIOS</i>	85
Analysis of Correlation Between the Economic Growth and Transport Development (1954-1989)..... <i>Janusz MYSZCZYSZYN, Bartosz MICKIEWICZ and Pawel MICKIEWICZ</i>	91
SQL Performance Optimizations During SAP ECC to SAP S/4 HANA Migration..... <i>Marek GAŁĄZKA and Jerzy SZYMAŃSKI</i>	99
Socio-Economic Aspects of Labor Migration of The Ukraine’s Population..... <i>Tetiana PIZNIAK, Olha KOVALOVA, Alevtyna ZABARA and Olha NOVIKOVA</i>	107
The Importance of The Relation Between Knowledge Sources Frequency Use and The Level of Customer Knowledge Utilisation in The ICT Sector New Product Development Process..... <i>Anna SZWAJLIK</i>	113
Access to Housing as An Element of Social and Economic Development of The Country on The Example of Selected European Union Member States..... <i>Marcin SUROWKA</i>	121
The Current State and Future Potential of Economic Cooperation between China and Azerbaijan within the Belt and Road Initiative..... <i>Shamil AZIZOV, Irshad KARIMLI and Bahruz BABAYEV</i>	129

E-Learning Environment to Enhance Students' Engagement in Learning Foreign Languages at The University: Theory and Practice.....	3593
<i>Nataliya SAMOYLENKO, Alexandra GLOTOVA, Iuliia CHERNITSOVA, Elena PODLOVILINA and Mariya ZUBKOVA</i>	
Effect of Adapting to Student Emotions on Servant Leadership of Teachers.....	3604
<i>Nisha. S. NEDUNGAYIL and Sreedharan. N. V.</i>	
Creation of a Reserve Fund as a Tool for Ensuring the Financial Security of an Enterprise.....	3610
<i>Valentina KHRAPKINA, Aleksy KWILINSKI, Jan POLCYN, Krzysztof PAJAŁ, Vasyl STRATONOV and Vitaliy KOBETS</i>	
Employee Teams' Readiness for Remote Work During The COVID-19 Pandemic.....	3628
<i>Katarzyna MIERZEJEWSKA and Michał CHOMICKI</i>	
Sources of The Competitive Advantage Inside the Business Ecosystems from The Perspective of Polish Entities.....	3639
<i>Michał CHOMICKI and Katarzyna MIERZEJEWSKA</i>	
Public Policy in The Aspect of Ensuring Citizens' Rights to Education.....	3649
<i>Natalia RAKSHA, Anna BORENSTEIN, Elena POZDNYAKOVA, Yulia VETCHINOVA, Sergey LIKHACHEV and Yulia RUPPEL</i>	
Conclusion of An Employment Contract During Remote Work.....	3654
<i>Natalia RAKSHA, Anna BORENSTEIN, Elena POZDNYAKOVA, Yulia VETCHINOVA and Sergey LIKHACHEV</i>	
Perception of Financial and Non-Financial Indicators of Value Creation in Their Reception and Provision with A Focus on Suppliers.....	3658
<i>Dana KUSNIROVA and Maria DURISOVA</i>	
Parameter Estimation in Item Response Models.....	3665
<i>Justyna BRZEZIŃSKA</i>	
Autonomization of Goals by Businesses on The Hotel Market: Selected Issues.....	3671
<i>Daniel SZOSTAK</i>	
Handling Non-Functional Requirements in Software Architecture.....	3674
<i>Mohammad Gulam LORGAT and Hugo PAREDES</i>	
Circular Economy as A Consequence of The Evolution of Economic Thought in The Perception of Natural Resources and The Problem of Waste.....	3679
<i>Wojciech PIONTEK</i>	
Research Directions of SMEs and Entrepreneurship in Conditions of Socio-Economic Change. Selected Issues.....	3690
<i>Anna DĘBICKA and Karolina OLEJNICZAK</i>	
Labour Resources in Azerbaijan.....	3696
<i>Krystyna GOMOLKA</i>	
Identification and Comparative Analysis of Ukrainian and Polish Scientific-Educational and Innovative Spaces of European Integration.....	3707
<i>Yuri KHARAZISHVILI, Aleksy KWILINSKI, Henryk DZWIGOL, Viacheslav LIASHENKO and Zygmunt LUKASZCZYK</i>	

## Creation of a Reserve Fund as a Tool for Ensuring the Financial Security of an Enterprise

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### Abstract

The paper substantiates the need to study the level of financial security of an enterprise. To study the dynamics of financial security of an enterprise it is considered a system-dynamic model and simulation of distributed financial flows of an industrial enterprise under impact of random factors, which reflect the threats affecting the financial security of enterprise. Information on the financial statements of firms is often confidential, which leads to the need to develop a simulation model of the firm's activities and to conduct experimental research based on size of an enterprise's reserve fund, which guarantees its financial security. During simulation experiments for industrial enterprise three scenarios (pessimistic scenario, optimistic scenario and most probable scenario) were considered and it was established that for at least half of the cases, an enterprise needs to form a reserve fund to maintain an autonomous operation and ensure the necessary level of financial security.

**Keywords:** Financial Security, Financial Stability, Current Assets, Cash Flow, Simulation Model of Enterprise.

### Introduction

Ensuring sustainable growth of the enterprise's activity, stability of its performance, achievement of goals that meet the interests of owners and society as a whole, is achieved by forming the enterprise's strategy, which in the global economy is determined by the availability of a reliable system of its financial and legal security (Rudensky, 2002; Starinets, 2018; Slizkaya, 2007).

Financial security is the object of research in the works of Ukrainian researchers (Baranovsky, 2004; Bilyiy, 2018; Solomin, 2018; Epiphanov, 2009). The need to ensure sustainable long-run development, especially under crisis, requires further study of approaches to assessing and analyzing the level of financial security of an enterprise.

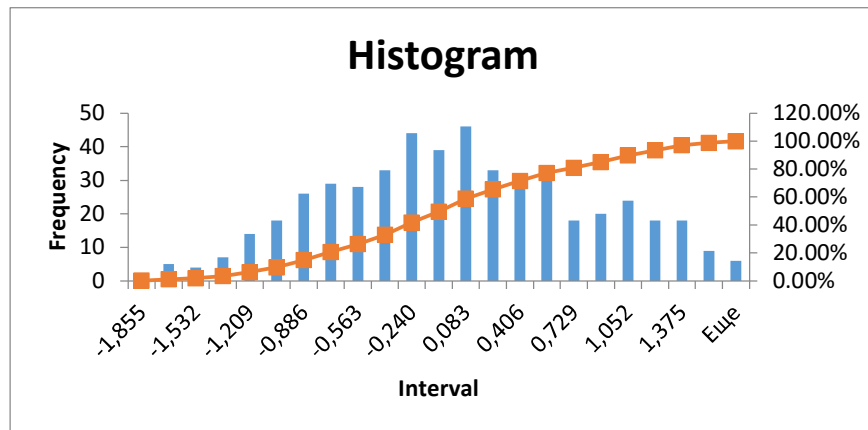
In the field of financial security of an enterprise there are problems associated not so much with the inefficiency of the financial activity of the enterprise, the impossibility of payments, the appearance of arrears, which reduces the level of financial security of the enterprise (Thompson, 2006; Bagrov, 2008), as with a systematic analysis of the dynamics of the financial condition of the enterprise, causing both administrative and criminal liability. This kind of problem requires a research using a systems approach and dynamic analysis of the system.

The level of the enterprises' financial security will ensure that State can perform its functions and provide economic development, make improvements to social standards. Thus, financial security of enterprises is one of major components of the national security of any country, because the enterprises are taxpayers. Assessment of financial security will allow the company to minimize the threats of financial instability and increase the safety of its existence.

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1.213893	18	93.40%
1.375399	18	97.00%
1.536905	9	98.80%
More	6	100.00%

The results of the simulation experiment in table 5 demonstrate that in 49.6% of cases there is no need for metallurgical enterprises to form a reserve fund, while in 50.4% of cases it becomes necessary to form a reserve fund to maintain the autonomous operation of the enterprise (Fig. 4).



**Fig. 4: Histogram of the Share of the Reserve Fund  $R/TC$  Distribution in the Structure of Current Assets (Most Probable Scenario)**

The average value of the  $R/TC$  ratio as a result of simulation experiments for the initial actual data was -3.96% with a standard deviation of 77.4%. With a 95% probability, the reserve for a metallurgical company should be at least 11% of its return capital.

## Conclusions

Thus, the use of the proposed simulation model made it possible to evaluate the complex effect of various factors on the financial security of an enterprise and its structure, investigate the dynamics of the integrated assessment of the financial security of an enterprise.

For statistically valid parameters for the operation of a metallurgical enterprise, three scenarios were considered for its operation and during simulation modeling it was determined with a 95% probability that the reserve of a representative industrial enterprise should be up to 11% of its return capital. Moreover, in 50.4% of cases of production activities, representative enterprise will explore these reserves using either equity or debt capital to ensure own financial security. This simulation model can be implemented in any other industries for decision-making of practitioners about size of reserve fund for initial parameters of representative industrial enterprise using different scenarios.

## References

- Aleksander, A., Krawczyk, D., Kuzior, A., & Kwilinski, A. (2020). 'The Conditions Affecting the Functioning of the Mass Media and Social Media Based on Empirical Research Conducted in Ukraine.' In Khalid S. Soliman (Ed.), *Proceedings of the 36th International Business Information Management Association (IBIMA) 4-5 November 2020* (pp. 10330-10342). Granada, Spain: IBIMA Publishing.
- Arefieva, O., Polous, O., Arefiev, S., Tytykalo, V., & Kwilinski, A. (2021). 'Managing sustainable development by human capital reproduction in the system of company's organizational behaviour.' *IOP Conference Series: Earth and Environmental Science*, 628, 012039.
- Bagrov, I.V. (2008). 'Classification of factors that determine the financial aspect of the company's economic security. DSFA Bulletin.' *Economic Sciences*, 20(2), 123--130.
- Baranovsky, O.I. (2004). 'Financial security in Ukraine (assessment methodology and mechanisms of provision).' Kyiv: KNTEU.
- Bilyiy, Y.M. (2018). 'Threats to financial security of Ukraine: semantic space of state-management content and classification. Investments: practice and experience 17.' Available at [http://www.investplan.com.ua/pdf/17\\_2018/23.pdf](http://www.investplan.com.ua/pdf/17_2018/23.pdf)

- Boiko, V., Kwilinski, A., Misiuk, M., & Boiko, L. (2019). 'Competitive Advantages of Wholesale Markets of Agricultural Products as a Type of Entrepreneurial Activity: The Experience of Ukraine and Poland.' *Economic Annals-XXI*, 175(1-2), 68-72. <https://doi.org/10.21003/ea.V175-12>
- Bogachov, S., Kwilinski, A., Miethlich, B., Bartosova, V., & Gurnak, A. (2020). 'Artificial Intelligence Components and Fuzzy Regulators in Entrepreneurship Development.' *Entrepreneurship and Sustainability Issues*, 8(2), 487-499. [http://doi.org/10.9770/jesi.2020.8.2\(29\)](http://doi.org/10.9770/jesi.2020.8.2(29))
- Borychowski, M., Stępień, S., Polcyn, J., Tošović-Stevanović, A., Čalović, D., Lalić, G., & Žuža, M. (2020). 'Socio-Economic Determinants of Small Family Farms' Resilience in Selected Central and Eastern European Countries.' *Sustainability*, 12(24), 10362. doi:10.3390/su122410362
- Britchenko, I., Bohomolova, N., & Kravchenko, O. (2018). 'Assessment of the determinants of financial security of railways in Ukraine.' *Financial and Credit Activity-Problems of Theory and Practice*, 4(27), 270-281.
- Buczkowski, P., & Kulkarni, V. (2006). 'Funding a warranty reserve with contributions after each sale.' *Probability in the Engineering and Informational Sciences*, 20(3): 497-515. <https://doi.org/10.1017/S026996480606030X>
- Cherchyk, L., Shershun, M., & Khumarova, N. (2019). 'Assessment of forest enterprises' performance: integrating economic security and ecological impact.' *Entrepreneurship and Sustainability Issues*, 6(4), 1784-1797.
- Chygryn, O., Bilan, Y., & Kwilinski, A. (2020). 'Stakeholders of Green Competitiveness: Innovative Approaches for Creating Communicative System.' *Marketing and Management of Innovations*, 3, 356-368. <https://doi.org/10.21272/mmi.2020.3-26>
- Cyfert, S., Glabiszewski, W., Krzakiewicz, K., & Zastempowski, M. (2020). 'The Importance of Dynamic Capabilities in the Processes of Alignment of Chemical Industry Enterprises to Changes in the Environment.' *Przemysł Chemiczny*, 99(6), 953-956.
- Czakon, W., Kawa, A., & Scott, S. (2020). 'Network Orientation of Logistics Service Providers: The Construct, Dimensionality and Measurement Scale.' *International Journal of Logistics Research and Applications*, 23(5), 474-492. <https://doi.org/10.1080/13675567.2019.1705260>
- Czyżewski, B., Matuszczak, A., & Miskiewicz, R. (2019). 'Public goods versus the farm price-cost squeeze: shaping the sustainability of the EU's common agricultural policy.' *Technological and Economic Development of Economy*, 25(1), 82-102. <https://doi.org/10.3846/tede.2019.7449>
- Czyżewski, B., Matuszczak, A., Polcyn, J., Smeździk-Ambroży, K., & Staniszewski, J. (2020). 'Deadweight loss in environmental policy: The case of the European Union member states.' *Journal of Cleaner Production*, 260, 121064. <https://doi.org/10.1016/j.jclepro.2020.121064>
- Dalevska, N., Khobta, V., Kwilinski, A., & Kravchenko, S. (2019). 'A Model for Estimating Social and Economic Indicators of Sustainable Development.' *Entrepreneurship and Sustainability Issues*, 6(4), 1839-1860. [https://doi.org/10.9770/jesi.2019.6.4\(21\)](https://doi.org/10.9770/jesi.2019.6.4(21))
- Demytyev, V.V., & Kwilinski, A. (2020). 'Institutsionalnaya sostavlyayuschaya izderzhek proizvodstva [Institutional Component of Production Costs].' *Journal of Institutional Studies*, 12(1), 100-116. <https://doi.org/10.17835/2076-6297.2020.12.1.100-116>
- Dyduch, W. (2019a). 'Entrepreneurial Strategy Stimulating Value Creation: Conceptual Findings and Some Empirical Tests.' *Entrepreneurial Business and Economics Review*, 7(3), 65-82. <https://doi.org/10.15678/EBER.2019.070304>
- Dyduch, W. (2019b). 'Organizational Design Supporting Innovativeness.' *Przegląd Organizacji*, 6, 16-23. <https://doi.org/10.33141/po.2019.06.02>
- Dzwigol, H. (2019a). 'The Concept of the System Approach of the Enterprise Restructuring Process.' *Virtual Economics*, 2(4), 46-70. [https://doi.org/10.34021/ve.2019.02.04\(3\)](https://doi.org/10.34021/ve.2019.02.04(3))
- Dzwigol, H. (2019b). 'Research Methods and Techniques in New Management Trends: Research Results.' *Virtual Economics*, 2(1), 31-48. [https://doi.org/10.34021/ve.2019.02.01\(2\)](https://doi.org/10.34021/ve.2019.02.01(2))
- Dzwigol, H. (2020a). 'Innovation in Marketing Research: Quantitative and Qualitative Analysis.' *Marketing and Management of Innovations*, 1, 128-135. <http://doi.org/10.21272/mmi.2020.1-10>
- Dzwigol, H. (2020b). 'Methodological and Empirical Platform of Triangulation in Strategic Management.' *Academy of Strategic Management Journal*, 19(4), 1-8.
- Dzwigol, H. (2021). Meta-Analysis in Management and Quality Sciences. *Marketing and Management of Innovation*, 1, 324-335. <https://doi.org/10.21272/mmi.2021.1-25>
- Dzwigol, H., & Wolniak, R. (2018). 'Controlling w procesie zarządzania chemicznym przedsiębiorstwem produkcyjnym [Controlling in the management process of a chemical industry production company].' *Przemysł Chemiczny*, 97(7), 1114-1116. <https://doi.org/10.15199/62.2018.7.15>
- Dzwigol, H., & Dzwigol-Barosz, M. (2018). 'Scientific Research Methodology in Management Sciences.' *Financial and Credit Activity: Problems of Theory and Practice*, 2(25), 424-437. <https://doi.org/10.18371/fcaptop.v2i25.136508>
- Dzwigol, H., & Dzwigol-Barosz, M. (2020). 'Sustainable Development of the Company on the Basis of Expert Assessment of the Investment Strategy.' *Academy of Strategic Management Journal*, 19(5), 1-7.
- Dzwigol, H., Shcherbak, S., Semikina, M., Vinichenko, O., & Vasiuta, V. (2019a). 'Formation of Strategic Change Management System at an Enterprise.' *Academy of Strategic Management Journal*, 18(SI1), 1-8.
- Dzwigol, H., Aleinikova, O., Umanska, Y., Shmygol, N., & Pushak, Y. (2019b). 'An Entrepreneurship Model for Assessing the Investment Attractiveness of Regions.' *Journal of Entrepreneurship Education*, 22(1S), 1-7.

- Dzwigoł, H., Dzwigoł-Barosz, M., Zhyvko, Z., Miskiewicz, R., & Pushak, H. (2019c). 'Evaluation of the Energy Security as a Component of National Security of the Country.' *Journal of Security and Sustainability Issues*, 8(3), 307-317. [https://doi.org/10.9770/jssi.2019.8.3\(2\)](https://doi.org/10.9770/jssi.2019.8.3(2))
- Dzwigoł, H., Dzwigoł-Barosz, M., & Kwilinski, A. (2020a). 'Formation of Global Competitive Enterprise Environment Based on Industry 4.0 Concept.' *International Journal of Entrepreneurship*, 24(1), 1-5.
- Dzwigoł, H., Dzwigoł-Barosz, M., Miskiewicz, R., & Kwilinski, A. (2020b). 'Manager Competency Assessment Model in the Conditions of Industry 4.0.' *Entrepreneurship and Sustainability Issues*, 7(4), 2630-2644. [https://doi.org/10.9770/jesi.2020.7.4\(5\)](https://doi.org/10.9770/jesi.2020.7.4(5))
- Epiphanov, A.O. (2009). 'Financial security of enterprises and banking institutions.' Sumy: UBS NBU.
- Furmaniak, S., Gauden, P.A., Patrykiewicz, A., Miśkiewicz, R., & Kowalczyk, P. (2018). 'Carbon Nanohorns as Reaction Nanochambers – a Systematic Monte Carlo Study.' *Scientific Reports*, 15407. <https://doi.org/10.1038/s41598-018-33725-z>
- Furmaniak, S., Gauden, P.A., Patrykiewicz, A., Miskiewicz, R., & Kowalczyk, P. (2019a). 'The Effects of Confinement in Pores Built of Folded Graphene Sheets on the Equilibrium of Nitrogen Monoxide Dimerisation Reaction.' *Journal of Physics Condensed Matter*, 31(13), 135001, 1-12. <https://doi.org/10.1088/1361-648X/aaffb3>
- Furmaniak, S., Gauden, P.A., Patrykiewicz, A., Szymański, G., Miśkiewicz, R., & Kowalczyk, P. (2019b). 'In Silico Study on the Effects of Carbonyl Groups on Chemical Equilibrium of Reactions with a Polar Product Occurring under Confinement in Pores of Activated Carbons.' *Chemical Engineering Communications*, 1-12. <https://doi.org/10.1080/00986445.2019.1700115>
- Galor, Z., & Sofer, M. (2019). 'The reserve fund: Is it a necessary anchor for a successful cooperative?' *Journal of Co-Operative Organization and Management*, 7(2), 100089. <https://doi.org/10.1016/j.jcom.2019.100089>
- Gorynia, M., Trąpczyński, P., & Bytniewski, S. (2019). 'The Concepts of Strategy and Business Models in Firm Internationalization Research: Towards a Research Agenda.' *International Entrepreneurship Review*, 5(2), 7-21. <https://doi.org/10.15678/ier.2019.0502.01>
- Gorynia, M. (2019). 'Competition and Globalisation in Economic Sciences. Selected Aspects.' *Economics and Business Review*, 5(3), 118-133. <https://doi.org/10.18559/eb.2019.3.7>
- Hughes, M., & Nagurney, A. (1992). 'A network model and algorithm for the analysis and estimation of financial flow of funds.' *Computer Science in Economics and Management*, 5, 23–39. <https://doi.org/10.1007/BF00435280>
- Ianioglo, A. (2016). 'Indicators of enterprise operating activity and levels of its economic security.' In: *Proceedings of the CBU International Conference on Innovations in Science and Education, Prague, Czech Republic, 23-25 March 2016* (pp. 36-41).
- Kaczmarek, J. (2019). 'The Mechanisms of Creating Value vs. Financial Security of Going Concern Sustainable Management.' *Sustainability* 11(8), 2278.
- Kaźmierczyk, J., & Chinalska, A. (2018). 'Flexible forms of employment, an opportunity or a curse for the modern economy? Case study: banks in Poland.' *Entrepreneurship and Sustainability Issues* 6(2), 782-798. [https://doi.org/10.9770/jesi.2018.6.2\(21\)](https://doi.org/10.9770/jesi.2018.6.2(21))
- Kharazishvili, Y., Kwilinski, A., Grishnova, O., & Dzwigoł, H. (2020). 'Social Safety of Society for Developing Countries to Meet Sustainable Development Standards: Indicators, Level, Strategic Benchmarks (with Calculations Based on the Case Study of Ukraine).' *Sustainability*, 12(21), 8953. <https://doi.org/10.3390/su12218953>
- Kharazishvili, Y., Kwilinski, A., Sukhodolia, O., Dzwigoł, H., Bobro, D., & Kotowicz, J. (2021). 'The Systemic Approach for Estimating and Strategizing Energy Security: The Case of Ukraine.' *Energies*, 14(8), 2126. <https://doi.org/10.3390/en14082126>
- Klimas, P., Czakon, W., Kraus, S., Kailer, N., & Maalaoui, A. (2020). 'Entrepreneurial Failure: A Synthesis and Conceptual Framework of its Effects.' *European Management Review*. 1-16. <https://doi.org/10.1111/emre.12426>
- Koibichuk, V., Ostrovska, N., Kashiyeva, F., & Kwilinski, A. (2021). 'Innovation Technology and Cyber Frauds Risks of Neobanks: Gravity Model Analysis.' *Marketing and Management of Innovations*, 1, 253-265. <http://doi.org/10.21272/mmi.2021.1-19>
- Kondratenko, V., Okopnyk, O., Ziganto, L., & Kwilinski, A. (2020). 'Innovation Development of Public Administration: Management and Legislation Features.' *Marketing and Management of Innovations*, 1, 87-94. <https://doi.org/10.21272/mmi.2020.1-06>
- Kobets, V., Yatsenko, V., Mazur, A., & Zubrii, M. (2018). 'Data analysis of private investment decision making using tools of Robo-advisers in long-run period.' *CEUR Workshop Proceedings*, 2104, 144-159.
- Korkuna, O., Demchenko, A.M., Tsyktor, A. (2016). 'Scoring assessment of financial security of borrower of small and medium business in Ukraine with the use of banking technology.' *Financial and credit activity-problems of theory and practice* 2(21), 14-22.
- Kurzweil, R. (2005). 'The Singularity is Near: When Humans Transcend Biology.' NY: Publisher Viking.
- Kuzior, A., Kwilinski, A., & Tkachenko, V. (2019). 'Sustainable Development of Organizations Based on the Combinatorial Model of Artificial Intelligence.' *Entrepreneurship and Sustainability*, 7(2), 1353-1376. [http://doi.org/10.9770/jesi.2019.7.2\(39\)](http://doi.org/10.9770/jesi.2019.7.2(39))
- Kwilinski, A. (2018a). 'Mechanism of Formation of Industrial Enterprise Development Strategy in the Information Economy.' *Virtual Economics*, 1(1), 7-25. [https://doi.org/10.34021/ve.2018.01.01\(1\)](https://doi.org/10.34021/ve.2018.01.01(1))



- Kwilinski, A. (2018b). 'Mechanism of Modernization of Industrial Sphere of Industrial Enterprise in Accordance with Requirements of the Information Economy.' *Marketing and Management of Innovations*, 4, 116-128. <http://doi.org/10.21272/mmi.2018.4-11>
- Kwilinski, A. (2019). 'Implementation of Blockchain Technology in Accounting Sphere.' *Academy of Accounting and Financial Studies Journal*, 23(SI2), 1-6.
- Kwilinski, A., Tkachenko, V., & Kuzior, A. (2019a). 'Transparent Cognitive Technologies to Ensure Sustainable Society Development.' *Journal of Security and Sustainability Issues*, 9(2), 561-570 [http://doi.org/10.9770/jssi.2019.9.2\(15\)](http://doi.org/10.9770/jssi.2019.9.2(15))
- Kwilinski, A., Drobyazko, S., & Derevyanko, B. (2019b). 'Synergetic and Value Effects in Corporate Mergers and Acquisitions of International Companies.' In Khalid S. Soliman (Ed.), *Proceedings of the 34th International Business Information Management Association Conference (IBIMA) 13-14 November 2019. Vision 2025: Education Excellence and Management of Innovations through Sustainable Economic Competitive Advantage in 2019* (pp. 9467-9471). Madrid, Spain: IBIMA Publishing.
- Kwilinski, A., Dalevska, N., Kravchenko, S., Hroznyi, I., Kovalenko, I. (2019c). 'Formation of the Entrepreneurship Model of E-Business in the Context of the Introduction of Information and Communication Technologies.' *Journal of Entrepreneurship Education*, 22(SI1), 1528-2651-22-SI-337: 1-7.
- Kwilinski, A., Ruzhytskyi, I., Patlachuk, V., Patlachuk, O., & Kaminska, B. (2019d). 'Environmental Taxes as a Condition of Business Responsibility in the Conditions of Sustainable Development.' *Journal of Legal, Ethical and Regulatory Issues*, 22(SI2) 1544-0044-22-SI-2-354: 1-6.
- Kwilinski, A., Volynets, R., Berdnik, I., Holovko, M., & Berzin, P. (2019e). 'E-Commerce: Concept and Legal Regulation in Modern Economic Conditions.' *Journal of Legal, Ethical and Regulatory Issues*, 22(SI2), 1544-0044-22-SI-2-357: 1-6.
- Kwilinski, A., Pajak, K., Halachenko, O., Vasylichak, S., Pushak, Ya., & Kuzior, P. (2019f). 'Marketing Tools for Improving Enterprise Performance in the Context of Social and Economic Security of the State: Innovative Approaches to Assessment.' *Marketing and Management of Innovations*, 4, 172-181. <http://doi.org/10.21272/mmi.2019.4-14>
- Kwilinski, A., & Kuzior, A. (2020). 'Cognitive Technologies in the Management and Formation of Directions of the Priority Development of Industrial Enterprises.' *Management Systems in Production Engineering*, 28(2), 119-123. <http://doi.org/10.1515/mspe-2019-0020>
- Kwilinski, A., Vyshnevskiy, O., & Dzwigol, H. (2020a). 'Digitalization of the EU Economies and People at Risk of Poverty or Social Exclusion.' *Journal of Risk and Financial Management*, 13(7), 142. <https://doi.org/10.3390/jrfm13070142>
- Kwilinski, A., Zaloznova, Y., Trushkina, N., & Rynkevych, N. (2020b). 'Organizational and Methodological Support for Ukrainian Coal Enterprises Marketing Activity Improvement.' *E3S Web of Conferences*, 168, 00031. <https://doi.org/10.1051/e3sconf/202016800031>
- Kwilinski, A., Dielini, M., Mazuryk, O., Filippov, V., & Kitseliuk, V. (2020c). 'System Constructs for the Investment Security of a Country.' *Journal of Security and Sustainability Issues*, 10(1), 345-358. [https://doi.org/10.9770/jssi.2020.10.1\(25\)](https://doi.org/10.9770/jssi.2020.10.1(25))
- Kwilinski, A., Shteingauz, D., & Maslov, V. (2020d). 'Financial and Credit Instruments for Ensuring Effective Functioning of the Residential Real Estate Market.' *Financial and Credit Activities: Problems of Theory and Practice*. 3(34), 133-140. Retrieved from <https://fkd.ubs.edu.ua/index.php/fkd/article/view/3023>
- Kwilinski, A., Slatvitskaya, I., Dugar, T., Khodakivsk, L., & Derevyanko, B. (2020e). 'Main Effects of Mergers and Acquisitions in International Enterprise Activities.' *International Journal of Entrepreneurship*, 24(Special Issue), 1-8.
- Kwilinski, A., Litvin, V., Kamchatova, E., Polusmiak, J., & Mironova, D. (2021). 'Information Support of the Entrepreneurship Model Complex with the Application of Cloud Technologies.' *International Journal of Entrepreneurship*, 25(1), 1-8.
- Kyrylov Y, Hranovska V, Boiko V, Kwilinski A, & Boiko L. (2020). 'International Tourism Development in the Context of Increasing Globalization Risks: On the Example of Ukraine's Integration into the Global Tourism Industry.' *Journal of Risk and Financial Management*, 13(12), 303. <https://doi.org/10.3390/jrfm13120303>
- Lakhno, V., Malyukov, V., Bochulia, T., Hipters, Z., Kwilinski, A., & Tomashevska, O. (2018). 'Model of Managing of the Procedure of Mutual Financial Investing in Information Technologies and Smart City Systems.' *International Journal of Civil Engineering and Technology*, 9(8), 1802-1812.
- Lyulyov, O., & Pimonenko, T. (2017a). 'Lotka-Volterra model as an instrument of the investment and innovative processes stability analysis.' *Marketing and Management of Innovations*, 1, 159-169. [doi: 10.21272/mmi.2017.1-14](https://doi.org/10.21272/mmi.2017.1-14)
- Lyulyov, O., & Shvindina, H. (2017b). 'Stabilisation Pentagon Model: application in the management at macro- and micro-levels.' *Problems and Perspectives in Management*, 15(3), 42-52. [doi:10.21511/ppm.15\(3\).2017.04](https://doi.org/10.21511/ppm.15(3).2017.04)
- Lyulyov, O., Chygryn, O., & Pimonenko, T. (2018). 'National brand as a marketing determinant of macroeconomic stability.' *Marketing and Management of Innovations*, 3, 142-152, [doi: 10.21272/mmi.2018.3-12](https://doi.org/10.21272/mmi.2018.3-12)
- Lyulyov, O., Us, Y., Pimonenko, T., Kwilinski, A., Vasylieva, T., Dalevska, N., Polcyn, J., & Boiko, V. (2020a). 'The Link Between Economic Growth and Tourism: Covid-19 Impact.' In Khalid S. Soliman (Ed.), *Proceedings of the 36th International Business Information Management Association (IBIMA) 4-5 November 2020*. (pp. 8070-8086). Granada, Spain: IBIMA Publishing.

- Lyulyov, O., Pimonenko, T., Kwilinski, A., Us, Y., Arefieva, O., Akimov, O., & Pudryk, D., (2020b). 'The Link Between Economic Growth and Tourism: Covid-19 Impact.' In Khalid S. Soliman (Ed.), *Proceedings of the 36th International Business Information Management Association (IBIMA) 4-5 November 2020* (pp. 8087-8101). Granada, Spain: IBIMA Publishing.
- Lyulyov, O., Pimonenko, T., Kwilinski, A., Dzwigol, H., Dzwigol-Barosz, M., Pavlyk, V., & Barosz, P. (2021). 'The Impact of the Government Policy on the Energy Efficient Gap: The Evidence from Ukraine.' *Energies*, 14(2), 373. <https://doi.org/10.3390/en14020373>
- Mlaabdal, S., Chygryn, O., Kwilinski, A., Muzychuk, O., & Akimov, O. (2020). 'Economic Growth and Oil Industry Development: Assessment of the Interaction of National Economy Indicators.' In Khalid S. Soliman (Ed.), *Proceedings of the 36th International Business Information Management Association (IBIMA) 4-5 November 2020* (pp. 8102-8114). Granada, Spain: IBIMA Publishing.
- Miskiewicz, R. (2018). 'The Importance of Knowledge Transfer on the Energy Market.' *Polityka Energetyczna*, 21(2), 49-62. <http://dx.doi.org/10.24425%2F122774>
- Miskiewicz, R. (2019). 'Challenges Facing Management Practice in the Light of Industry 4.0: The Example of Poland.' *Virtual Economics*, 2(2), 37-47. [https://doi.org/10.34021/ve.2019.02.02\(2\)](https://doi.org/10.34021/ve.2019.02.02(2))
- Miskiewicz, R. (2020a). 'Internet of Things in Marketing: Bibliometric Analysis.' *Marketing and Management of Innovations*, 3, 371-381. <http://doi.org/10.21272/mmi.2020.3-27>
- Miskiewicz, R. (2020b). 'Efficiency of Electricity Production Technology from Post-Process Gas Heat: Ecological, Economic and Social Benefits.' *Energies*, 13(22), 6106. <https://doi.org/10.3390/en13226106>
- Mutoko, W.R. (2015). 'Challenges of financing small, medium and micro-enterprises: The case of Botswana manufacturing sector.' In: *Proceedings of the 7th International Conference on Business and Finance*, Cape Town, South Africa, 09-10 September 2015, pp. 21-27.
- Lapach, S.N., Chubenko A.V., Babich P.N. (2001). *Statistics in science and business*. Kyiv.'
- Long, H., & Liu, O. (2016). 'Research of Enterprise Groups and Centralized Financial Management.' In: *Proceedings of the 2nd International Conference on Economy, Management and Education Technology*, Chongqing, China, 28-29 May 2016, Vol. 62, pp. 986-989.
- Melnychenko, O. (2020). 'Is Artificial Intelligence Ready to Assess an Enterprise's Financial Security?' *Journal of Risk and Financial Management*, 13(9), 191. <https://doi.org/10.3390/jrfm13090191>
- Melnychenko, O. (2021). 'The Energy of Finance in Refining of Medical Surge Capacity.' *Energies*, 14, 210. <https://doi.org/10.3390/en14010210>
- Melnychenko, O. (2019). 'Application of artificial intelligence in control systems of economic activity.' *Virtual Economics*, 2(3), 30-40. [https://doi.org/10.34021/ve.2019.02.03\(3\)](https://doi.org/10.34021/ve.2019.02.03(3))
- Miśkiewicz, R., & Wolniak, R. (2020). 'Practical Application of the Industry 4.0 Concept in a Steel Company.' *Sustainability*, 12(14), 5776. <https://doi.org/10.3390/su12145776>
- Muravev, D., Hu, H., Rakhmangulov, A., & Mishkurov, P. (2020). 'Multi-agent optimization of the intermodal terminal main parameters by using AnyLogic simulation platform: Case study on the Ningbo-Zhoushan Port.' *International Journal of Information Management*. <https://doi.org/10.1016/j.ijinfomgt.2020.102133>
- Nikiforova, V.A. (2008). 'Features of the Active Scenario of the Development of the Metallurgical Industry of Ukraine.' *Mechanism of Regulation of the Economy*, 1, 177-184.
- Nosovaa, E., & Yafinovycha, O. (2015). 'Financial Security of Enterprises.' *Procedia Economics and Finance*, 27, 248 – 266. [https://doi.org/10.1016/S2212-5671\(15\)00998-3](https://doi.org/10.1016/S2212-5671(15)00998-3)
- Onural, L., Pınar, M.C., Firtına, C. (2020). 'Modeling Economic Activities and Random Catastrophic Failures of Financial Networks via Gibbs Random Fields.' *Computational Economics*. <https://doi.org/10.1007/s10614-020-10023-3>
- Pająk, K., Kamińska, B., & Kvilinskyi, O. (2016). 'Modern Trends of Financial Sector Development under the Virtual Regionalization Conditions.' *Financial and Credit Activity: Problems of Theory and Practice*, 2(21), 204-217. <https://doi.org/10.18371/fcaptop.v2i21.91052>
- Pająk, K., Kvilinskyi, O., Fasięcka, O., & Miskiewicz, R. (2017). 'Energy security in regional policy in Wielkopolska region of Poland.' *Economics and Environment*, 2(61), 122-138.
- Pimonenko, T., & Lyulyov, O. (2019). 'Marketing strategies of green investments: main provisions and basic features.' *Herald of Ternopil National Economic University*, (1), 177-185. [doi:https://doi.org/10.35774/visnyk2019.01.177](https://doi.org/10.35774/visnyk2019.01.177)
- Ponomarenko, T., Khudolei, V., Prokopenko, O., & Klisinski, J. (2018a). 'Competitiveness of the information economy industry in Ukraine.' *Problems and Perspectives in Management*, 16(1), 85-95. [http://dx.doi.org/10.21511/ppm.16\(1\).2018.08](http://dx.doi.org/10.21511/ppm.16(1).2018.08)
- Ponomarenko, T., Zinchenko, O., Khudoliei V., Prokopenko, O., & Pawliszczy, D. (2018b). 'Formation of the Investment Environment in Ukraine in the Context of European Integration: An Example of Poland.' *Investment Management and Financial Innovations*, 15(1), pp. 361-373. [http://dx.doi.org/10.21511/imfi.15\(1\).2018.30](http://dx.doi.org/10.21511/imfi.15(1).2018.30)
- Prokopenko, O., & Miskiewicz, R. (2020). 'Perception of "Green Shipping" in the Contemporary Conditions.' *Entrepreneurship and Sustainability Issues*, 8(2), 269-284. [https://doi.org/10.9770/jesi.2020.8.2\(16\)](https://doi.org/10.9770/jesi.2020.8.2(16))
- Rudensky, R.A. (2002). 'Modeling of the processes of anticipative management of economic security.' Donetsk, Ukraine: Donetsk National University.

- Saługa, P.W., Szczepańska-Woszczyna, K., Miśkiewicz, R., & Chład, M. (2020). 'Cost of Equity of Coal-Fired Power Generation Projects in Poland: Its Importance for the Management of Decision-Making Process.' *Energies*, 13(18), 4833. <https://doi.org/10.3390/en13184833>
- Savchenko, T., Basiurkina, N., Rodina, O., & Kwilinski, A. (2019). 'Improvement of the Assessment Methods of Product Competitiveness of the Specialized Poultry Enterprises.' *Management Theory and Studies for Rural Business and Infrastructure Development*, 41(1), 43-61. <https://doi.org/10.15544/mts.2019.05>
- Shafi, M., Liu, J., & Ren, W. (2020). 'Impact of COVID-19 pandemic on micro, small, and medium-sized Enterprises operating in Pakistan.' *Research in Globalization*, 2, 1–14. <https://doi.org/10.1016/j.resglo.2020.100018>
- Shkodina, I., Melnychenko, O., & Babenko, M. (2020). 'Quantitative Easing Policy and Its Impact on the Global Economy.' *Financial and Credit Activity: Problems of Theory and Practice*, 2(33), 513-521. <http://dx.doi.org/10.18371/fcaptop.v2i33.207223>
- Slizkaya, V.P. (2007). 'Management of financial security of an enterprise in conditions of instability.' *Problems of Modern Economy*, 4(24). Available at <http://www.m-economy.ru/art.php?nArtId=1761>
- Solomin, G.V. (2018). 'Ensuring financial and economic security of entrepreneurship: a manual.' Dnipropetrovsk: Dnipropetrovsk State University of Internal Affairs.
- Song, M., & Fisher, R. (2018). 'How to Apply Advanced Statistical Analysis to Computational Economics: Methods and Insights.' *Computational Economics*, 52, 1045–1052. <https://doi.org/10.1007/s10614-018-9832-7>
- Sosnovska, O., & Zhytar, M. (2018). 'Financial architecture as the base of the financial safety of the enterprise.' *Baltic Journal of Economic Studies*, 4(4), 334-340.
- Starinets, O.G. (2018). 'Methods of financial analysis of enterprises in the system of crisis management.' *Scientific Bulletin of Uzhgorod National University*, 17(2). Available at [http://www.visnyk-econom.uzhnu.uz.ua/archive/17\\_2\\_2018ua/21.pdf](http://www.visnyk-econom.uzhnu.uz.ua/archive/17_2_2018ua/21.pdf)
- Thompson, A. A. (2006). 'Strategic Management: Concepts and Situations for Analysis.' Williams.
- Tkachenko, V., Kwilinski, A., Korystin, O., Svyrydiuk, N., & Tkachenko, I. (2019a). 'Assessment of Information Technologies Influence on Financial Security of Economy.' *Journal of Security and Sustainability*, 8(3), 375-385. [http://doi.org/10.9770/jssi.2019.8.3\(7\)](http://doi.org/10.9770/jssi.2019.8.3(7))
- Tkachenko, V., Kwilinski, A., Klymchuk, M., & Tkachenko, I. (2019b). 'The Economic-Mathematical Development of Buildings Construction Model Optimization on the Basis of Digital Economy.' *Management Systems in Production Engineering*, 27(2), 119-123. <http://doi.org/10.1515/mspe-2019-0020>
- Tkachenko, V., Kwilinski, A., Tkachenko, I., & Puzyrova, P. (2019c). 'Theoretical and Methodical Approaches to the Definition of Marketing Risks Management Concept at Industrial Enterprises.' *Marketing and Management of Innovations*, 2, 228-238. <http://doi.org/10.21272/mmi.2019.2-20>
- Tkachenko, V., Kwilinski, A., Kaminska, B., Tkachenko, I., & Puzyrova, P. (2019d). 'Development and Effectiveness of Financial Potential Management of Enterprises in Modern Conditions.' *Financial and Credit Activity: Problems of Theory and Practice*, 3(30), 85-94. <https://doi.org/10.18371/fcaptop.v3i30.179513>
- Tkachenko, V., Kuzior, A., & Kwilinski, A. (2019e). 'Introduction of artificial intelligence tools into the training methods of entrepreneurship activities.' *Journal of Entrepreneurship Education*, 22(6), 1-10.
- Trapczyński, P., Gorynia, M., Nowak, J., & Wolniak, R. (2019). 'EU Countries from Central and Eastern Europe, and the Investment Development Path Model: A New Assessment.' *Argumenta Oeconomica*, 2(43), 385-406. <https://doi.org/10.15611/aoe.2019.2.16>
- Urbaniak, M. (2019). 'Risk factors affecting relations with suppliers.' *Logforum*, 15(2), 255-263.
- Vatamanyuk-Zelinska, U., & Melnychenko, O. (2020). 'The effectiveness of financial and economic regulation of land relations in the context of stimulating entrepreneurial activity in the regions of Ukraine.' *Problems and Perspectives in Management*, 18(3), 11-27. [http://dx.doi.org/10.21511/ppm.18\(3\).2020.02](http://dx.doi.org/10.21511/ppm.18(3).2020.02)
- Yaremko, Y., Shykova, L., & Syvolap, L. (2018). 'Methods of evaluation and conceptual-strategic directions of economic security of agricultural enterprises.' *Baltic Journal of Economic Studies*, 4(5), 421-430.
- Zastempowski, M., Glabiszewski, W., Krukowski, K., & Cyfert, S. (2020). 'Technological Innovation Capabilities of Small and Medium-Sized Enterprises.' *European Research Studies*, 23(3), 460-474.