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SWOT ANALYSIS OF INNOVATIVE PRODUCTS CONTAINING FOOD ADDITIVE «MAGNETOFOOD»

page 4–11

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The object of research is the methods of evaluating food products containing food additive «Magnetofood» considering the prospects for its introduction into production. One of the most problematic areas for the commercialization of food production technologies in the early stages of the innovation process is the complex evaluation of scientific and technological developments. In the evaluation of new food products, research is mainly carried out using qualimetric methods based on individual quality indicators, considering existing standards or specifications. However, the methods of qualimetrics evaluation of food quality do not allow to conclude on the potential of its commercialization. Thus, the evaluation of technological innovations using complex evaluation methods, including SWOT analysis, is promising.

Used methods of content analysis, expert evaluation, comparative and dynamic analysis, average and relative values, integral evaluation during the research of the introducing prospects into the food industry enterprises activity the innovative products containing additive «Magnetofood». The researches results are the reasoning of a set of unit and integral indicators for SWOT analysis of innovative products containing food additive «Magnetofood». Indicators are calculated taking into account the significance and factors influence that reflect the products quality characteristics and consumers' interest in it, global trends and national peculiarities of the innovative technologies introduction into the nutrition field. Comparison of complex evaluation of the innovative products strengths and weaknesses, opportunities and threats to its production and implementation made it possible to conclude that there are great prospects for introduction of innovative products containing food additive «Magnetofood» into the activity of food industry enterprises.

The developed system of SWOT analysis indicators provides an opportunity to carry out a complex evaluation of the pros-

pects for the innovative technologies introduction in the food products production which will help to optimize the innovation policy of food industry enterprises.

Keywords: food additive «Magnetofood», food products, nanoproducts market, implementation of innovative products.

References

1. *Indeksy promyslovoi produktsii za vydamy diialnosti za sichenberezen 2019 r.* Available at: <http://www.ukrstat.gov.ua/>
2. *Naukova ta innovatsiina diialnist Ukrainy* (2018). Kyiv, 178. Available at: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/09/zb_nauka_2017.pdf
3. Chukhray, N. I., Stegnytskyi, A. V. (2015). Integrated assessment of scientific and technical development at early stages of innovative process. *Marketing and Management of Innovations*, 1, 11–23.
4. Chaudhry, B., Verma, P. K. (2016). Technological Innovation Capabilities: A Critical Review. *International Journal of Latest Technology in Engineering, Management & Applied Science*, 5 (4), 95–101.
5. Birkinshaw, J., Hamel, G., Mol, M. J. (2008). Management Innovation. *Academy of Management Review*, 33 (4), 825–845. doi: <http://doi.org/10.5465/amr.2008.34421969>
6. Carbonell-Foulquié, P., Munuera-Alemán, J. L., Rodríguez-Escudero, A. I. (2004). Criteria employed for go/no-go decisions when developing successful highly innovative products. *Industrial Marketing Management*, 33 (4), 307–316. doi: [http://doi.org/10.1016/s0019-8501\(03\)00080-4](http://doi.org/10.1016/s0019-8501(03)00080-4)
7. Salavati, M., Abdi, F., TeymooPayandeh, A. (2015). A structural equation modelling to investigate and analyze the relationships among new product development, disruptive innovation, fuzzy-front end, knowledge management, and team vision. *Uncertain Supply Chain Management*, 3 (2), 129–140. doi: <http://doi.org/10.5267/j.uscm.2014.12.008>
8. Hart, S., Hulting, E. J., Tzokas, N., Commandeur, H. R. (2003). Industrial Companies' Evolution Criteria in New Product Development Gates. *Product innovation management*, 20 (1), 22–36. doi: <http://doi.org/10.1111/1540-5885.201003>
9. Hill, T., Westbrook, R. (1997). SWOT Analysis: It's Time for a Product Recall. *Long Range Planning*, 30 (1), 46–52. doi: [http://doi.org/10.1016/s0024-6301\(96\)00095-7](http://doi.org/10.1016/s0024-6301(96)00095-7)
10. Gürel, E. (2017). Swot analysis: a theoretical review. *Journal of International Social Research*, 10 (51), 994–1006. doi: <http://doi.org/10.17719/jisr.2017.1832>
11. Kvashnin, A. (2006). *Kak provesti ekspertizu proekta kommersializatsii tekhnologii. Prakticheskoe rukovodstvo dlia tsentrov kommersializatsii.* Available at: <https://docplayer.ru/38481257-Kak-provesti-ekspertizu-proekta-kommercializacii-tehnologiy-proekt-europeid-nauka-i-kommercializaciya-tehnologiy-2006.html>
12. Fuchedzhi, V. I. (2013). SWOT-analysis as a tool of crisis management financial. *The Actual Problems of Regional Economy Development*, 2 (9), 156–161.
13. Synchuk, I. V. (2016). Importance of SWOT-analysis in decision-making system during financial crisis. *Young Scientist*, 3 (30), 174–178.
14. Senyshyn, O. S. (2017). Forming strategic directions of organic farming development in Ukraine using the technique of SWOT-analysis. *Economy and Society*, 10, 112–120.
15. Ustenko, I. A. (2015). Application of swot analysis in the development and promotion of enriched drinks. *Eastern-European Journal of Enterprise Technologies*, 2 (10 (74)), 25–31. doi: <http://doi.org/10.15587/1729-4061.2015.39762>
16. Mardar, M. R. (2014). A Comprehensive Research of the Product Using the Method of the Swotanalysis with Bread on the Basis of Wheat Whole Grain as an Example. *Grain Products and Mixed Fodder's*, 3 (35), 33–38.
17. Gab, A. I., Kalakura, M. M., Kushchevska, N. F., Malishev, V. V. (2018). Nanotechnologies and Nanomaterials in Food Industry.

Vcheni zapysky TNU imeni V. I. Vernadskoho. Seriya: Tekhnichni nauky, 29 (1 (68)), 3, 37–41.

18. *Pro priorytetni napriamy innovatsiinoi diialnosti v Ukraini* (2003). Zakon Ukrainy No. 433-IV. 16.01.2003. Available at: <https://zakon.rada.gov.ua/laws/card/433-15>
19. *Global Nanotechnology Market (by Component and Applications), Funding & Investment, Patent Analysis and 27 Companies Profile & Recent Developments – Forecast to 2024* (2018). Global, 191. Available at: <https://www.wiseguyreports.com/reports/3141909-global-nanotechnology-market-by-component-and-applica>
20. Dasgupta, N., Ranjan, S., Mundekkad, D., Ramalingam, C., Shanker, R., Kumar, A. (2015). Nanotechnology in agro-food: From field to plate. *Food Research International*, 69, 381–400. doi: <http://doi.org/10.1016/j.foodres.2015.01.005>
21. Chellaram, C., Murugaboopathi, G., John, A. A., Sivakumar, R., Ganesan, S., Krithika, S., Priya, G. (2014). Significance of Nanotechnology in Food Industry. *APCBEE Procedia*, 8, 109–113. doi: <http://doi.org/10.1016/j.apcbee.2014.03.010>
22. Fesenko, O. M., Kovalchuk, S. V., Nyshchuk, R. A. (2017). Challenges and opportunities for nanotechnology development in Ukraine and the world. *Marketing and Management of Innovations*, 1, 170–179. doi: <http://doi.org/10.21272/mmi.2017.1-15>
23. *Global Innovation Index 2018*. Available at: https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2018.pdf
24. *2019 Bloomberg Innovation Index*. Available at: <https://datawrapper.dwcdn.net/3hi4O/2/?abcnewseembedheight=550>
25. Pushak, Ya., Duma, O. (2018). The role of technology transfer in ensuring the economic security of Ukraine. *Economic Herald of the Donbas*, 2, 140–145.
26. *Vyznachennia priorytetnykh napriamkiv komertsializatsii nanotekhnologii v Ukraini*. Available at: <https://ndc-ipr.org/researches/post/priorytetni-napryamki-nanotekhnology>
27. *Ratio of Nanotechnology Patents to Nano-Articles (Patents per 100 Articles)*. Stat Nano. Available at: <https://statnano.com/report/s88>
28. *Global corporations adapt to nanomaterial EHS challenges*. Available at: <https://www.framingnano.eu/latest-news>
29. *European nanotechnology landscape report*. Available at: http://www.nanotec.it/public/wp-content/uploads/2014/04/ObservatoryNano_European_Nanotechnology_Landscape_Report.pdf

ECONOMIC CYBERNETICS

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MONITORING OF THE DEVELOPMENT OF INFORMATION INFRASTRUCTURE IN UKRAINE

page 12–18

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The object of research is the information infrastructure of Ukraine. One of the most problematic places is the lack of an assessment and monitoring system for the development of information infrastructure. It was revealed that the main drawbacks of the existing monitoring indicators are the lack of consideration of the level of information threats. Assessment of the development of information infrastructure takes place without taking into account the degree of information security of its objects.

During the study, methods of system analysis were used to assess the indicators of the development of information infrastructure in the context of the level of information threats. Meta-analysis of scientific works and normative legal acts is used to systematize the scientific provisions on research issues.

It is established that the system of indicators used for assessing information security is most often used, including the indicators of the level of development of information and communication technologies in the context of the main subjects of the information infrastructure. This is due to the availability of information.

Due to the developed system of assessment and monitoring of the development of information infrastructure, it is possible to obtain knowledge about the level of information threats and security. Compared to similar well-known approaches to evaluation, this provides a number of benefits. In particular, it is possible to identify critical infrastructure objects that are characterized by the highest level of exposure to information threats. This approach has proved to be necessary to ensure the protection of information in the private sector of the information sphere.

The assessment of the state of the information infrastructure on the basis of the developed monitoring system made it possible to identify a number of trends. The development of the information infrastructure of enterprises and technologies in the information sphere is fast-paced. This is due to the increasing

level of computerization, technological re-equipment, the use of social media companies and the «big data» analysis. One of the factors is the rapid spread of cloud technologies and computing. At the same time, it enables to automate the business processes of processing and analysis of information. However, on the other hand, it serves as a source of threats to internal information and information infrastructure.

Keywords: information threats, information security, monitoring system, indicators of information threats, protection of personal information.

References

1. *Pro rishennia Rady natsionalnoi bezpeky i oborony Ukrainy «Pro Stratehiu natsionalnoi bezpeky Ukrainy»* (2015). Ukaz Prezidenta Ukrainy No. 287/2015. 06.05.2015. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/287/2015#n14>
2. *Stratehiia kiberbezpeky Ukrainy* (2016). Ukaz Prezidenta Ukrainy No. 96/2016. 27.01.2016. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/96/2016#n11>
3. *Pro rishennia Rady natsionalnoi bezpeky i oborony Ukrainy «Pro Doktrynu informatsiinoi bezpeky Ukrainy»* (2017). Ukaz Prezidenta Ukrainy No. 47/2017. 29.12.2016. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/47/2017>
4. *Pro osnovni zasady zabezpechennia kiberbezpeky Ukrainy* (2018). Zakon Ukrainy No. 2163-VIII. 08.07.2018. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/2163-19/conv>
5. *Pro natsionalnu bezpeku Ukrainy* (2018). Zakon Ukrainy No. 2469-VIII. 21.06.2018. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/2469-19?lang=en>
6. Zolotukhin, D. (2018). *Monitorynh zahroz u informatsionomu prostori dopomozhe efektyvnishe spravliatysia z krytychnymy sytuatsihamy*. Available at: <https://mip.gov.ua/news/2431.html>
7. *Pro Stratehiu staloho rozvytku «Ukraina – 2020»* (2015). Ukaz Prezidenta Ukrainy No. 5/2015. 12.01.2015. VR Ukrainy. Baza danykh «Zakonodavstvo Ukrainy». Available at: <https://zakon.rada.gov.ua/laws/show/5/2015>
8. Dougan, O. D. (2015). Legal bases of formation and development of information security. *Information security man, society and the state*, 3 (19), 6–17.
9. Kobko, Ye. V. (2018). Monitoring of Threats to the State National Security: Foreign Experience and Ukrainian Realities of

- Public-Legal Provision. *Naukovyi visnyk Natsionalnoi akademii vnutrishnikh sprav*, 1 (106), 122–134.
10. Kovalova, K. V., Pershko, O. L. (2018). Proektnyi menedzhment: sotsialne proektuvannia innovatsii v orhanizatsiakh. *Financial mechanisms of innovative economic development of Ukraine in conditions of European integration*. Kyiv, 275–277.
 11. Molodetska-Hrynychuk, K. V. (2017). Analysis of influence threats of an information security of the state in a social internet-service to the spheres of public activities. *Upravlinnia rozvytkom skladnykh system*, 30, 121–127.
 12. Fedorenko, R. M. (2015). Kontent-monitorynh informatsiinoho prostoru yak chynnyk zabezpechennia informatsiinoi bezpeky derzhavy u voiennoi sferi. *Suchasnyi zakhyst informatsii*, 2, 21–25.
 13. Pakhnin, M. L. (2014). Pryntsypy, zavdannia ta instrumenty derzhavnoi informatsiinoi polityky Ukrainy v suchasnykh umovakh. *Teoriia ta praktyka derzhavnogo upravlinnia*, 3, 87–95.
 14. Tkachuk, T. Yu. (2017). Mekhanizmy protyidii informatsiinykh zahrozam zovnishnikh dzherel. *Visnyk NTUU «KPI»*, 1/2 (33/34), 242–246.
 15. Tkachuk, T. (2017). Suchasni zahrozy informatsiinoi bezpetsi derzhavy: teoretyko-pravovyi analiz. *Informatsiine pravo*, 10, 182–186.
 16. Rizov, V. (2018). Information Sharing for Cyber Threats. *Information & Security: An International Journal*, 39 (1), 43–50. doi: <http://doi.org/10.11610/isij.3904>
 17. Parker, D. B. (1993). A Comprehensive List of Threats To Information. *Information Systems Security*, 2 (2), 10–14. doi: <http://doi.org/10.1080/19393559308551348>
 18. Fried, L. (1994). Information security and new technology Potential Threats and Solutions. *Information Systems Management*, 11 (3), 57–63. doi: <http://doi.org/10.1080/07399019408964654>
 19. Kar, J., Mishra, M. R. (2016). Mitigating Threats and Security Metrics in Cloud Computing. *Journal of Information Processing Systems*, 12 (2), 226–233. doi: <http://doi.org/10.3745/jips.03.0049>
 20. Suchkov, A. P. (2017). The information structure of threats to national security. *Systems and Means of Informatics*, 27 (2), 113–124. doi: <http://doi.org/10.14357/08696527170210>
 21. Dainow, B. (2017). Threats to Autonomy from Emerging ICTs. *Australasian Journal of Information Systems*, 21, 1–16. doi: <http://doi.org/10.3127/ajis.v21i0.1438>
 22. Monov, L., Karev, M. (2018). How to Counter Hybrid Threats? *Information & Security: An International Journal*, 39 (2), 113–126. doi: <http://doi.org/10.11610/isij.3909>
 23. *Pidrozdil Derzhavnogo tsestru kiberzakhystu Derzhspetsviazku CERT-UA*. Available at: <https://cert.gov.ua/>
 24. *Vykorystannia informatsiino-komunikatsiinykh tekhnolohii na pid-priemstvakh za 2017 rik*. Available at: <http://www.ukrstat.gov.ua>
 25. *Kilkist abonentiv viazku na 1 zhovtnia 2018 roku*. Available at: <http://www.ukrstat.gov.ua>
 26. *Stan i rozvytok viazku za 2017 rik*. Available at: <http://www.ukrstat.gov.ua>
 27. *Ofitsiynyi sait Internet Asotsiatsii Ukrainy*. Available at: <https://inau.ua/pro-asociaciyu>
 28. *Provedeno opratsiuvannia zvitiv operatoriv pro yakist telekomunikatsiinykh posluh za 2017 rik*. Available at: <http://spz.nkrzi.gov.ua/golovna/yakist-poslug/dani-pro-yakist/>
 29. *Obsiah realizovanykh posluh u sferi telekomunikatsii ta poshtovoho viazku za 9 misiatsiv 2018 roku*. Available at: <http://www.ukrstat.gov.ua>

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RESEARCH OF THE PLACE OF UKRAINE IN IMPLEMENTATION OF THE GOALS OF THE SUSTAINABLE DEVELOPMENT MODEL

page 19–27

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The object of research is a system of processes for determining the level of a country's development in the context of a sustainable development model. One of the most problematic places is the mistakenly constructed or incorrectly interpreted composite indicators, which can lead to simplified analytical or political conclusions.

A study is conducted on the use of composite indicators as tools for identifying development trends in the countries of the European Union, which makes it possible to determine the advantages and disadvantages of their use. And also to establish common and distinctive features with the indicators specified in the Sustainable Development Strategy of the country until 2030. The hierarchical system of composite indicators is built with their subsequent verification for completeness and dimensionality in accordance with the requirements of the selected theoretical and methodological methods of analysis.

An interconnected sequence of steps is identified to determine the integral index for each of the studied countries with a view to rating them on the basis of the system of obtained composite indicators and their weight. Based on the obtained eigenvalues of the centered-normalized main components for each of the studied countries and certain substantive interpretations of the main components, a pair-wise comparative analysis is conducted within the studied set of countries. And also carried out a cluster analysis, which allows to identify groups of countries that are close in value to the integral index. The ranking of the studied countries is carried out on the basis of the calculation of individual integral development indicators, calculated as the sum of its integral indicators for two subsets – stimulant indicators and disincentive indicators.

The study of 33 countries allows to identify the place of Ukraine in the direction of the implementation of individual goals of its development based on a system of composite indicators. And also to assess the relative remoteness of Ukraine both from states that are close in their socio-economic development, and from highly developed European countries.

Keywords: sustainable development model, composite indicators, cluster analysis, trends in the country development, stimulant indicators, disincentive indicators.

References

1. Bandura, R. (2006). *A Survey of Composite Indices Measuring Country Performance: 2006 Update*. New York: UNDP/ODS Working Papers, 91. Available at: https://www.undp.org/content/dam/undp/library/corporate/Development%20Studies/measuring_country_performance_2006update.pdf
2. Saltelli, A. (2006). Composite Indicators between Analysis and Advocacy. *Social Indicators Research*, 81 (1), 65–77. doi: <http://doi.org/10.1007/s11205-006-0024-9>
3. Brand, D. A., Saisana, M., Rynn, L. A., Pennoni, F., Lowenfels, A. B. (2007). Comparative Analysis of Alcohol Control Policies in 30 Countries. *PLoS Med*, 4 (4), 752–759. doi: <http://doi.org/10.1371/journal.pmed.0040151>
4. Tarantola, S., Saisana, M., Saltelli, A., Schmiedel, F., Leapman, N. (2002). *Statistical techniques and participatory approaches for the composition of the European Internal Market Index 1992–2001*. European Commission, Joint Research Centre. Available at: <https://publications.europa.eu/en/publication-detail/-/publication/8d2a58c9-8e14-4bf0-b4ba-96d555882783>

5. Rosen, R. (1991). *Life Itself: A Comprehensive Inquiry into Nature, Origin, and Fabrication of Life*. New York: Columbia University Press, 285.
6. Sharpe, A. (2004). *Literature Review of Frameworks for Macro-indicators*. Ottawa: Centre for the Study of Living Standards. Available at: <https://ideas.repec.org/p/sls/resrep/0403.html>
7. Cavicchia, C., Vichi, M. (2017). *Model-Based synthesis of indicators. Statistical Composite Indicators to convey consistent policy messages*. Sapienza University of Rome. Available at: https://composite-indicators.jrc.ec.europa.eu/sites/default/files/02%20-%20Model-based%20Synthesis%20for%20SDGs%20Indicators%20-%20Maurizio%20Vichi_0.pdf
8. *ESSNet-Culture European Statistical System Network Culture*. Final Report. Available at: http://ec.europa.eu/assets/eac/culture/library/reports/ess-net-report_en.pdf
9. *Tsili staloho rozvytku: Ukraina. Natsionalna dopovid 2017*. Ministerstvo ekonomichnoho rozvytku i torhivli Ukrainy. Available at: me.gov.ua/Documents/Download?id=22e86f94-a9dd-421e-adcb-e38748a4b7cb
10. *Pokaznyky dlia monitorynhu stanu dosiahnennia Tsilei staloho rozvytku: metodolohiia zboru ta rozrakhunku danykh* (2017). Analitichnyi zvit. Available at: [http://www.ua.undp.org/content/](http://www.ua.undp.org/content/ukraine/uk/home/library/sustainable-development-report/Mapping-SDG-indicators-report.html)
- ukraine/uk/home/library/sustainable-development-report/Mapping-SDG-indicators-report.html
11. *Ukraina 2030: Doktryna zbalansovanoho rozvytku* (2017). Lviv: Kalvariia, 164.
12. *Handbook on Constructing Composite Indicators. Methodology and user guide* (2008). European Commission. Available at: <https://www.oecd.org/sdd/42495745.pdf>
13. *Tsili v haluzi Staloho rozvytku*. Available at: <https://www.un.org/sustainabledevelopment/ru/sustainable-development-goals/>
14. *World Development Indicators 2016*. Available at: <http://documents.worldbank.org/curated/en/805371467990952829/World-development-indicators-2016>
15. *SDG Index and Dashboards Report 2018*. Implementing the Goals. Global Responsibilities. Available at: <http://sdgindex.org/reports/2018/>
16. Borovikov, V. P. (1998). *Statistica – Statisticheskii analiz i obrabotka dannykh v crede Windows*. Moscow: Inf. Izd. Dom «Filin», 608.
17. Konushkin, A. S., Vetrov, D. P., Kropotov, D. A. et. al. (2009). *Umenshenie razmernosti v dannykh. Metod glavnikh komponent*. Available at: <https://courses.graphicon.ru/files/courses/smisa/2009/lectures/lecture12.pdf>

DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

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ANALYSIS AND SYSTEMATIZATION OF MARKETING STUDIES DATA OF THE UKRAINIAN NANOPOWDER MARKET AND FORMATION OF THE PROGRAM FOR ITS DEVELOPMENT

page 28–34

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The object of research is the Ukrainian market of nanopowders. Available literature sources do not cover this topic completely. Their data systematization will solve this problem. Therefore, in the paper the literature on the development of the Ukrainian nanotechnology industry is systematized, and the forecast of the period of release of certain nanomaterials to the market is made. The directions of R&D projects in this area are also analyzed, and a valuation of the production of nanomaterials is made.

The literature sources analysis made it possible to note launch and implementation of targeted programs for nanostructured materials and nanotechnology in all leading countries around the world. The indexes and development trends of the modern Ukrainian nanotechnology branch are presented. Ukrainian nanotechnologies market is at the initial stage of its formation. The total amount of investments in nanotechnology projects is dominated by state funding. Today, Ukraine is far behind the developed countries by the volume of private investments in researches in the field of nanotechnology. The commercial nanopowders market in Ukraine is practically not developed. The country is just beginning to introduce nanosized products standards and enterprises certification. The studies of Ukrainian companies in the field of nanotechnologies are aimed at modifying various materials. The terms for the nanopowders release to the commercial market depending on application sectors are proposed. The distribution of Ukrainian enterprises by nanotechnology research fields is presented together with the projects structure depending on the research fields in the nanotechnology area. Costs analysis of the Ukrainian nanopowders market is carried out. It is shown that high costs of nanopowders are due to both low production volume and high costs of raw materials. The main branches-consumers of nanopowders in Ukraine are presented, and forecasts for market development up to 2025 are made.

Due to the analysis and systematization of literature data of scientists at the Ukrainian market of nanopowders and the consideration of its development programs it becomes possible to obtain objective information on the Ukrainian market of nanopowders and to predict its future development.

Keywords: development prognosis of Ukrainian nanopowders market, marketing research, pricing factors, consuming industries.

References

- Korotieieva, A. V., Kushchevska, N. F., Malyshev, V. V. (2015). Doslidzhennia rynku nanoporoshkiv: prohnaz obsiahu vyrobnytstva ta rozvytku, struktura rynku, tsinovyi analiz. *Marketynh v Ukraini*, 5 (92), 29–33.
- Melikhov, I. V. (2002). Tendentsii rozvitiia nanokhimii. *Rossiiskii khimicheskii zhurnal*, 46 (5), 7–13.
- Sergeev, G. B. (2002). Razmernye efekty v nanokhimii. *Rossiiskii khimicheskii zhurnal*, 46 (5), 22–29.
- Starostin, V. V. (2008). *Materialy i metody nanotekhnologii*. Moscow: Binomnaia laboratoria znanii, 431.
- Marketingove issledovanie rynku nanoporoshkov (versia 4. Khronologiia issledovaniia: 2005–2009 roky s prognozami do 2018 goda) (2010). *Analiticheskii ochet*, 130.
- Balabanov, V. I. (2009). *Nanotekhnologii. Nauka budushchego*. Moscow: Eksmo, 240.
- Zhoakim, K., Plever, L. (2009). *Nanonauki. Nevidimaia revoliutsiia*. Moscow: Kolibri, 240.
- Drexler, E. K., Peterson, C., Pergamit, G. (1993). *Unbounding the future: The nanotechnology revolution*. New York: Quill Books, 166.
- Regis, E., Chinsky, M. (1996). *Nano: The emerging science of nanotechnology*. New York: Little Brown and Co., 416.
- Feinman, R. (2002). Vnizu polnym polno mesta: priglashenie v novii mir fiziki. *Khimiia i zhizn*, 12, 20–26.
- Golovin, Iu. I. (2003). *Vvedenie v nanotekhnologiiu*. Moscow: Mashinostroenie, 112.
- Andrievskii, R. A., Ragulia, A. V. (2005). *Nanostrukturnye materialy*. Moscow: Academia, 187.
- Dzidziguri, E. L. (2009). Dimensional characteristics of nanopowders. *Nanotechnologies in Russia*, 4, 857–870. doi: <http://doi.org/10.1134/s1995078009110147>
- Lerner, M. I., Svarovskaya, N. V., Psakhie, S. G., Bakina, O. V. (2009). Production technology, characteristics, and some applications of electric-explosion nanopowders of metals. *Nanotechnologies in Russia*, 4, 741–757. doi: <http://doi.org/10.1134/s1995078009110019>
- Palmer, M. Y. (2019). Truong. Introduction to the special issue on the nature of industrial marketing work. *Industrial Marketing Management*, 2, 350–368. doi: <http://doi.org/10.1016/j.indmarman.2019.02.004>
- Naudé, P., Sutton-Brady, C. (2019). Relationships and networks as examined in Industrial Marketing Management. *Industrial Marketing Management*, 79, 27–35. doi: <http://doi.org/10.1016/j.indmarman.2019.03.006>
- Ghazinoory, S., Ameri, F., Farnoodi, S. (2013). An application of the text mining approach to select technology centers of excellence. *Technological Forecasting and Social Change*, 80 (5), 918–931. doi: <http://doi.org/10.1016/j.techfore.2012.09.001>
- Frima, H. J., Gabellieri, C., Nilsson, M.-I. (2012). Drug delivery research in the European Union's Seventh Framework Programme for Research. *Journal of Controlled Release*, 161 (2), 409–415. doi: <http://doi.org/10.1016/j.jconrel.2012.01.044>
- He, X., Hwang, H.-M. (2016). Nanotechnology in food science: Functionality, applicability, and safety assessment. *Journal of Food and Drug Analysis*, 24 (4), 671–681. doi: <http://doi.org/10.1016/j.jfda.2016.06.001>
- Morris, J. E. (2018). Nanopackaging: Nanotechnologies and Electronics Packaging. *Nanopackaging*. Cham: Springer, 1–44. doi: http://doi.org/10.1007/978-3-319-90362-0_1
- Di Benedetto, C. A., Lindgreen, A. (2018). The Emergence of Industrial Marketing Management as the Leading Academic Journal in Business-to-Business Marketing. *Industrial Marketing Management*, 69, 5–12. doi: <http://doi.org/10.1016/j.indmarman.2018.01.023>
- Nilsson, T. (2018). How marketers argue for business – Exploring the rhetorical nature of industrial marketing work. *Industrial Marketing Management*, 20, 5–17. doi: <http://doi.org/10.1016/j.indmarman.2018.10.004>
- Malyshev, V., Gab, A., Shakhnin, D., Ambrova, M., Danielik, V., Fellner, P. (2012). Review of the electrodeposition of molybdenum carbide on the surfaces of disperse dielectric and semiconductor materials. *Acta Chimica Slovaca*, 5 (2), 139–144. doi: <http://doi.org/10.2478/v10188-012-0021-3>
- Malyshev, V. V., Gab, A. I., Pisanenko, A. D., Soloviev, V. V., Chernenko, L. A. (2014). Electrodeposition of tungsten and molybdenum carbide onto the surfaces of disperse dielectric and semiconductor materials. *Materialwissenschaft Und Werkstofftechnik*, 45 (1), 51–56. doi: <http://doi.org/10.1002/mawe.201400189>
- Malyshev, V., Gab, A., Shakhnin, D., Lukashenko, T., Ishtvanik, O., Gaune-Escard, M. (2017). High-Temperature Electrochemical Synthesis of Nanopowders of Tungsten Carbide in Ionic Melts. Nanochemistry, Biotechnology, Nanomaterials. And Their Applications. *Springer Proceedings in Physics*, 214, 311–321. doi: http://doi.org/10.1007/978-3-319-92567-7_19
- Malyshev, V., Gab, A., Shakhnin, D., Schuster, D. (2017). Production of Dispersed Powders of the Silicides of Metals from Group VI-B by the Electrolysis of Halide-Oxide Melts. *Materials Science*, 52 (4), 550–558. doi: <http://doi.org/10.1007/s11003-017-9989-6>
- Molotovskaia, L. A., Shakhnin, D. B., Uskova, N. N., Malyshev, V. V. (2016). Sintez dispersnykh poroshkov silitsidov metallov VI – B gruppy elektrolizom galogenidno-oksidsnykh rasplavov. *Voprosy khimii i khimicheskoi tekhnologii*, 1 (105), 66–71.
- Won, C., Nersisyan, H., Won, H., Lee, J. (2010). Refractory metal nanopowders: Synthesis and characterization. *Current opinion in solid state and materials science*, 14 (3-4), 53–68. doi: <http://doi.org/10.1016/j.cossms.2009.10.001>
- Onischenko, V., Soloviev, V., Solianyk, L., Malyshev, V. (2016). Ecologically safe and resource-saving methods for recycling waste tungsten, niobium carbide-cobalt cermets and extraction of tungsten and niobium from concentrates. *Materialwissenschaft und Werkstofftechnik*, 47 (9), 852–857. doi: <http://doi.org/10.1002/mawe.201600501>
- Rafailovic, L., Minic, D. (2009). Deposition and characterisation of nanostructured nickel-cobalt alloys. *Chemical Industry*, 63 (5a), 557–567.
- Malyshev, V., Gab, A., Survila, A., Donath, C., Neacsu, E., Popescu, A., Constantin, V. (2019). Electroplating of Co-W and Co-Mo Alloys from Na₂WO₄ Ionic Melts. *Revista de Chimie*, 70 (93), 871–874.
- Malyshev, V. V., Kushchevska, N. F. (2019). Oderzhannia poroshkiv volframu ta yoho karbidu. *Poroshkova metalurhiia*, 1, 3–10.
- Trakhtenberh, I. M., Dmytrukha, N. M. (2013). Nanochastynky metaliv, metody otrymannia, sfery zastosuvannia, fizyko-khimichni ta tekhnichni vlastyvoli. *Ukrainskyi zhurnal z problem medytsyny*, 4 (37), 62–74.
- Hussain, C. (2018). *Handbook of nanomaterials for industrial applications*. Elsevier, 1077.
- Malyshev, V., Shakhnin, D. (2013). Corrosion Resistance of Nanopowders of Borides and Carbides of the Metals of Groups IV–VIB in Nickel-Plating Electrolytes. *Materials Science*, 49 (3), 356–360. doi: <http://doi.org/10.1007/s11003-013-9622-2>
- Wautelet, M., Dauchot, J. P., Hecq, M. (2003). Size effects on the phase diagrams of nanoparticles of various shapes. *Materials Science and Engineering: C*, 23 (1-2), 187–190. doi: [http://doi.org/10.1016/s0928-4931\(02\)00266-7](http://doi.org/10.1016/s0928-4931(02)00266-7)
- Budevski, E., Staikov, G., Lorenz, W. J. (2000). Electrocrystallization. Nucleation and growth phenomena. *Electrochimica Acta*, 45 (15-16), 2559–2574. doi: [http://doi.org/10.1016/s0013-4686\(00\)00353-4](http://doi.org/10.1016/s0013-4686(00)00353-4)
- Lukashenko, T., Kushchevska, N., Malyshev, V. (2014). Zabezpechennia zdorovia ta bezpeky, okhorona navkolyshnoho sere dovnyshcha – osoblyvi aspekty standartyzatsii nanotekhnolohii i nanomaterialiv. *Stroytelnie materialy i izdeliia*, 2 (77), 26–27.
- Doroshenko, A. M., Chekman, I. S. (2014). Mahnitni nanochastynky: vlastyvoli i biomedychne zastosuvannia. *Ukrainskyi medychnyi chasopys*, 4 (102), 10–13.
- Chekman, I. S., Doroshenko, A. M. (2010). Kliniko-farmakolohichni vlastyvoli nanochastynok zaliza. *Ukrainskyi medychnyi chasopys*, 3 (77), 44–50.
- Haynes, C. L., Van Duyne, R. P. (2001). Nanosphere Lithography: A Versatile Nanofabrication Tool for Studies of Size-Dependent Nanoparticle Optics. *The Journal of Physical Chemistry B*, 105 (24), 5599–5611. doi: <http://doi.org/10.1021/jp010657m>
- Balabanov, V. I. (2009). Effekt lotosa v avtomobilnoi promyshlennosti. *Nanotekhnologii, proizvodstvo, ekologiia*, 1, 82–86.

43. Hlynchuk, M. D., Rahulia, A. V. (2010). *Nanoferryky*. Kyiv: Naukova dumka, 381.
44. Liubchenko, V. E., Mitiagin, A. Iu., Pomortsev, L. A. (2003). Almaz – perspektivnyi material dlia nanoelektroniki. *Inzhenernaia fizika*, 5, 51–58.
45. Malinetskii, G. G., Mitin, N. A., Naumenko, S. A. (2005). Nanobiologii i senergetika. *Problemy i idei*. Moscow, 31.
46. Erokhin, M. N., Balabanov, V. I., Strelnikov, V. V. (2008). *Nanotehnologii i nanomaterialy v agroinzhenerii*. Moscow: MGAU, 300.
47. Moroz, I. O. (2016). *Nanotehnolohii v osvittii haluzi*. Sumy: Sup DPU, 244.
48. Lukashenko, T. F., Malyshev, V. V., Gab, A. I., Bruszkova, D.-M. Ia. (2016). Didakticheskie osobennosti podgotovki budushchikh inzhenerov khimicheskikh spetsialnostei na primere kursa «Neorganicheskaia khimii». *Problemy sovremennoi nauki i obrazovaniia*, 3 (45), 177–180.
49. Paton, B., Moskalenko, V., Chekman, I., Movchan, B. (2009). Nanonauka i nanotehnolohii: tekhnichniy, metodychniy ta sotsialnyi aspekty. *Visnyk NAN Ukrainy*, 6, 18–26.
50. Malyshev, V. V., Lukashenko, T. F., Lypova, L. A., Sushchenko, A. M. (2011). Nanotehnolohii ta pidhotovka suchasnoho inzhenera v svitli realizatsii pryntsyypiv i zavdan Bolonskoho protsesu. *Osvita rehioniv*, 5, 52–58.
51. Foster, Ia. Iu. (2008). *Mir materialov i tekhnologii. Nanotehnologii. Nauka, innovatsii i vozmozhnosti*. Moscow: Tekhnosfera, 352.
52. Balabanov, V. I. (2009). *Nanotehnologii. Nauka budushchego*. Moscow: Eksmo, 256.
53. Tretiakov, Iu. D., Gudilin, E. A. (2009). Osnovnye napravleniia fundamentalnykh i oriientirovannykh issledovaniy v oblasti nanomaterialov. *Uspekhi khimii*, 78 (9), 867–869.

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THE COSTS COMPARISON OF PRODUCING, EXPLOITATION AND UTILIZATION OF RENEWABLE, NUCLEAR AND NON-RENEWABLE ENERGY

page 35–39

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The object of research is the methods for comparing the cost of production, operation and utilization of renewable, nuclear and non-renewable energy. One of the most problematic places in determining which energy is the cheapest is that different authors focus on various aspects of the assessment of energy sources. Some scientists focus solely on the cost of building a certain type of power plant, others on the cost of utilization or the cost of operation. However, there is no single approach that would eliminate the shortcomings of previous studies and estimate the cost of various energy resources in a comprehensive manner. The approach to the study will be based on the methods of analysis, comparison, observation and synthesis, will eliminate some of the shortcomings that were inherent in the previous study, and consider the issue of the cost of energy resources more comprehensively.

The result obtained in this work allows to look at the problem of estimating the cost of energy resources more widely and better understand which energy technology is the cheapest, in terms of price, not only during creation, use and disposal, but in general. This is due to the fact that the proposed method of estimating the cost has a number of features, including the cost of nuclear, renewable and non-renewable energy from three points of view: the cost of creating technology, use and disposal. This ensures the possibility of obtaining a much broader view of this issue and a deep understanding of the advantages and disadvantages of

each type of energy technology at each stage of use. With the help of identifying weaknesses and strengths, as well as opportunities and threats, the results of the study and generalization obtained using the SWOT analysis in tables are analyzed. Compared with similar well-known studies, this provides a deeper understanding of which energy technology is truly the best.

Keywords: energy security, types of electricity production, energy price, energy technology.

References

1. Ram, M., Child, M. (2017). *Comparing electricity production costs of renewables to fossil and nuclear power plants in G20 countries*. Lappeenranta University of Technology (LUT), 1–84.
2. Candelise, C., Winkler, M., Gross, R. J. K. (2013). The dynamics of solar PV costs and prices as a challenge for technology forecasting. *Renewable and Sustainable Energy Reviews*, 26, 96–107. doi: <http://doi.org/10.1016/j.rser.2013.05.012>
3. Raugei, M., Fullana-i-Palmer, P., Fthenakis, V. (2012). The energy return on energy investment (EROI) of photovoltaics: Methodology and comparisons with fossil fuel life cycles. *Energy Policy*, 45, 576–582. doi: <http://doi.org/10.1016/j.enpol.2012.03.008>
4. Evans, A., Strezov, V., Evans, T. (2010). Comparing the sustainability parameters of renewable, nuclear and fossil fuel electricity generation technologies. *Proceedings of the 21st World Energy Congress*. London: World Energy Council, 1–19.
5. Deniz, P. *Oil Prices and Renewable Energy: Oil Dependent Countries*. Available at: https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=MEEA18&paper_id=49
6. Lunardi, M., Alvarez-Gaitan, J., Bilbao, J., Corkish, R. (2018). Comparative Life Cycle Assessment of End-of-Life Silicon Solar Photovoltaic Modules. *Applied Sciences*, 8 (8), 1396. doi: <http://doi.org/10.3390/app8081396>
7. Latunussa, C. E. L., Ardente, F., Blengini, G. A., Mancini, L. (2016). Life Cycle Assessment of an innovative recycling process for crystalline silicon photovoltaic panels. *Solar Energy Materials and Solar Cells*, 156, 101–111. doi: <http://doi.org/10.1016/j.solmat.2016.03.020>
8. Ilas, A., Ralon, P., Rodriguez, A., Taylor, M. (2018). *Renewable Power Generation Costs in 2017*. Abu Dhabi: International Renewable Energy Agency, 160.
9. Weckend, S., Wade, A., Heath, G. (2016). *End of Life Management, Solar Photovoltaic Panels*. IRENA, 100.
10. *BP Statistical Review of World Energy* (2018). BP p.l.c., 56.
11. Lantz, E., Hand, M., Wiser, R. (2012). The Past and Future Cost of Wind Energy: Preprint. *2012 World Renewable Energy Forum Denver*. Colorado: NREL, 1–10.
12. *Uranium Price* (2019). Available at: <https://www.cameco.com/invest/markets/uranium-price>
13. Enerhetyka. Available at: <https://uk.wikipedia.org/wiki/Енергетика>
14. Binek, A., Petrus, M. L., Huber, N., Bristow, H., Hu, Y., Bein, T., Docampo, P. (2016). Recycling Perovskite Solar Cells To Avoid Lead Waste. *ACS Applied Materials & Interfaces*, 8 (20), 12881–12886. doi: <http://doi.org/10.1021/acsami.6b03767>
15. Fthenakis, V. M. (2004). Life cycle impact analysis of cadmium in CdTe PV production. *Renewable and Sustainable Energy Reviews*, 8 (4), 303–334. doi: <http://doi.org/10.1016/j.rser.2003.12.001>
16. Komoto, K., Lee, J. (2018). *End-of-Life Management of Photovoltaic Panels: Trends in PV Module Recycling Technologies: Report IEA-PVPS T12-10:2018*. International Energy Agency Photovoltaic Power Systems Program, 105.
17. Dziedzioch, V., Felix, J. (2018). *Recycling of Silicon Based Photovoltaic Modules*. Energimyndigheten, 32.
18. Khlopytskyi, O., Makarchenko, N. (2013). Perspektyvy rozvytku pererobky tverdykh shlakovykh vidkhodiv teplovykh elektrostantsii u hotovi produkty. *Pratsi Odeskoho politekhnichnoho universytetu*, 3 (42), 91–94.
19. Cotton, M. (2017). *Nuclear waste politics*. London: Routledge, 71.
20. Morse, A. (2012). *Managing Risk Reduction at Sellafield*. London: National Audit Office, 50.

PROBLEMS OF MACROECONOMICS AND SOCIO-ECONOMIC DEVELOPMENT

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ANALYSIS OF GOVERNMENT SHUTDOWN AS A COMPOSITION OF STATE'S FISCAL POLICY

page 40–44

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The object of research is the management of practical issues of the implementation of fiscal policy in the functioning of the budget system of different countries. One of the most problematic places is the implementation of a coordinated policy on education and the use of budgetary funds with the implementation of the threat of stopping the work of the government and forced leave of employees.

The analysis of the modern system of procedures for resolving contradictions between the top leadership of the country and the highest legislative body of the state is carried out. It is found that stopping the work of the government caused significant damage to the economy. The state bears the real costs, as the contractors raise their prices to minimize the risks that arise. Permanent closure and opening of government work require additional costs for reviewing and evaluating the functioning of the programs included in the budget of each institution. In addition, violations of the existing work cycle makes it difficult to plan and launch future projects and require specialists to have additional time to revise work plans each time budget assignments change. In addition, many tax charges are not collected during a government shutdown. It is determined that, through blackmail and threats and other measures, various decisions are taken in the implementation of budget policies that affect social, political and economic issues.

The study used methods of chronological analysis of the budget process, stopping the work of the government and forced vacations of employees. The connection of the decisions made with the budget process and the work of both houses of Congress has been determined. A comparative analysis with similar interruptions of the government's work in other countries shows that it is perfectly acceptable to solve the problems of fiscal policy without interrupting the work of the government and without sending employees on forced leave. This ensures the ability to effectively manage the practical issues of the implementation of fiscal policy. Compared to more aggressive methods, democratic procedures for the normal organization of the budget process allow for a coordinated policy on education and the use of budget funds without devastating consequences for the economy.

Keywords: implementation of budget policies, government shutdown, organization of budget process, fiscal policy.

References

1. Matthews, D. (2013). Here is every previous government shutdown, why they happened and how they ended. *The Washington Post*. Available at: https://www.washingtonpost.com/news/wonk/wp/2013/09/25/here-is-every-previous-government-shutdown-why-they-happened-and-how-they-ended/?utm_term=.eb0fbf41c1be
2. Committee for a Responsible Federal Budget (2019). *Q&A: Everything You Should Know About Government Shutdowns*. Available at: <https://www.crfb.org/papers/qa-everything-you-should-know-about-government-shutdowns>
3. Worstall, T. (2016). Spain Has No Government For 10 Months – Economy Grows, Unemployment Falls To 18.9%. *Forbes*. Available at: <https://www.forbes.com/sites/timworstall/2016/10/27/spain-has-no-government-for-10-months-economy-grows-unemployment-falls-to-18-9/#26612e69b62c>

4. Bryan, B. (2019). The government shutdown is in day 35 and has shattered the record for the longest shutdown in history. *Business insider*. Available at: <https://www.businessinsider.com/history-of-government-shutdowns-in-congress-2018-1>
5. Inman, R. P. (1993). Presidential leadership and the fiscal policy: learning from Reagan's role. *NBER*, 4395. doi: <http://doi.org/10.3386/w4395>
6. Favero, C., Giavazzi, F. (2007). Debt and the effects of fiscal policy. *NBER*, 12822. doi: <http://doi.org/10.3386/w12822>
7. Minder, R., Zucchini, D. (2016). Spaniards, Exhausted by Politics, Warm to Life Without a Government. *The New York Times*. Available at: <https://www.nytimes.com/2016/10/03/world/europe/spain-socialists-sanchez-rajoy.html>
8. Belgium marks a year without a government (2011). *The Telegraph*. Available at: <https://www.telegraph.co.uk/news/world-news/europe/belgium/8571756/Belgium-marks-a-year-without-a-government.html>
9. Strauss, V. (2013). 589 days with no elected government: What happened in Belgium. *The Washington Post*. Available at: https://www.washingtonpost.com/news/answer-sheet/wp/2013/10/01/589-days-with-no-elected-government-what-happened-in-belgium/?utm_term=.d980eea6332c
10. Noack, R. (2018). Australia tried its own government 'shutdown' in 1975. The queen's man in Sydney was not amused, and it never happened again. *The Washington Post*. Available at: https://www.washingtonpost.com/world/2019/01/02/australia-tried-its-own-government-shutdown-queen-was-not-amused-it-never-happened-again/?utm_term=.bf07aa8ff614
11. Democracy index (2018). *The Economist*. Available at: https://www.eiu.com/Handlers/WhitepaperHandler.ashx?fi=Democracy_Index_2018.pdf&mode=wp&campaignid=Democracy2018

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IMPROVEMENT OF FISCAL EFFICIENCY OF INDIRECT TAXES IN UKRAINE

page 45–50

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The object of research is the system of indirect taxation, in particular, the mechanisms of administration of indirect taxes. One of the most problematic places is the lack of efficiency of such taxes, affecting the volume of revenues to the Consolidated Budget of Ukraine.

Statistical and economic methods are used to assess the fiscal value of indirect consumption taxes in the structure of budget revenues. The analytical method is used when considering the status of indirect taxes for the reporting period (2014–2018), which gave a complete picture of the amount of budget revenues. The main shortcomings of the system of taxation of indirect taxes are identified and substantiated, the most important of which are: reduction of the fiscal sufficiency of the value added tax (VAT) and the imperfection of the system of administration of indirect taxes. Based on the method of comparing the experience of various countries, the main ways of improving tax administration in Ukraine have been found.

As a research result, it is found that VAT is the main one in terms of budget formation. Its share reached the highest level

in 2018 (75.1 %). This is due to the fact that since 2016, a 7 % rate on medicines has been introduced. The second in fiscal efficiency is the excise tax, which tended to increase from 22.9 % in 2014 to 24.3 % in 2017. The third indirect tax is the duty: its share in 2014 was 6.4 %, decreasing to 4.7 % in 2018

Thanks to the research, it is established that the level of fulfillment of indirect taxes in Ukraine did not meet the planned indicators. This demonstrates the need to improve the functioning of the tax system. This result can be achieved by reducing the list of preferential VAT transactions and improving the customs legislation of Ukraine in accordance with international standards. The use of foreign experience in the regulation of Ukrainian indirect taxation will contribute to the stabilization of economic growth and the gradual integration of the state into the European community.

Keywords: effective budget replenishment, indirect taxes, budget revenues, value added tax, tax system.

References

1. *EY. Indirect Tax in 2016. A review of global indirect tax developments and issues* (2016). Available at: <http://www.ey.com/Publication/vwLUAssets/ey-indirect-tax-developments-in-2016/%24FILE/ey-indirect-tax-developments-in-2016.pdf>
2. *How Immigrants Contribute to Developing Countries' Economies* (2018). Paris: OECD Publishing. doi: <http://doi.org/10.1787/9789264288737-en>
3. Vasylychuk, V. V. (2018). Vtraty biudzhetu Ukrainy vnaslidok zlovzhyvan iz PDV. *Vcheni zapysky Tavriiskoho natsionalnoho universytetu imeni V. I. Vernadskoho. Seriya: Ekonomika i upravlinnia*, 29 (1 (68)), 83–90.
4. *Supporting the Development of More Effective Tax Systems: A Report to the G-20 Development Working Group by the IMF* (2011). OECD, UN and World Bank. Available at: <https://www.oecd.org/ctp/48993634.pdf>
5. Jensen, S., Schjelderup, G. (2011). Indirect taxation and tax incidence under nonlinear pricing. *International Tax and Public Finance*, 18 (5), 519–532. doi: <http://doi.org/10.1007/s10797-011-9167-y>
6. *Global Beps Report 2018: Impact of Beps Across Taxand Jurisdictions*. Available at: <http://www.taxand.com/wp-content/uploads/2018/04/Global-BEPS-Report-2018.pdf>
7. Kmit, V. M., Voloshchuk, O. H. (2017). Napriamy udoskonalennia systemy nepriamoho opodatkovannia v Ukraini. *Ekonomika ta suspilstvo*, 13, 1124–1128.
8. Sotnichenko, O. A. (2013). Mytne rehuliuivannia tovaroobrotu u konteksti mizhnarodnoi intehratsii. *Zbirnyk Naukovykh prats Natsionalnoho universytetu derzhavnoi podatkovoi sluzhby Ukrainy*, 2, 165–176.
9. *Taxation trends in the European Union. Data of the EU Member States, Iceland and Norway* (2013). Eurostat Statistical books, 313.
10. Wang, H. (2018). Optimal Indirect Taxes and Subsidies under Imperfect Competition. *Journal of Institutional and Theoretical Economics*, 174 (2), 334–350. doi: <http://doi.org/10.1628/093245617x14993199883414>
11. Richnyi zvit pro vykonannia derzhavnogo biudzhetu za 2014 rik. *Ofitsiynyi sait Derzhavnoi kaznacheiskoi sluzhby Ukrainy*. Available at: <https://www.treasury.gov.ua/ua/file-storage/richnij-zvit-pro-vikonannya-derzhavnogo-byudzhetu-na-01012015-roku>
12. Richnyi zvit pro vykonannia derzhavnogo biudzhetu za 2015 rik. *Ofitsiynyi sait Derzhavnoi kaznacheiskoi sluzhby Ukrainy*. Available at: <https://www.treasury.gov.ua/ua/file-storage/richnij-zvit-pro-vikonannya-derzhavnogo-byudzhetu-ukraini-za-2015-rik>
13. Richnyi zvit pro vykonannia derzhavnogo biudzhetu za 2016 rik. *Ofitsiynyi sait Derzhavnoi kaznacheiskoi sluzhby Ukrainy*. Available at: <https://www.treasury.gov.ua/ua/file-storage/richnij-zvit-pro-vikonannya-derzhavnogo-byudzhetu-ukraini-za-2016-rik>
14. Richnyi zvit pro vykonannia derzhavnogo biudzhetu za 2017 rik. *Ofitsiynyi sait Derzhavnoi kaznacheiskoi sluzhby Ukrainy*. Available at: <https://www.treasury.gov.ua/ua/file-storage/richnij-zvit-pro-vikonannya-derzhavnogo-byudzhetu-ukraini-za-2017-rik>
15. Richnyi zvit pro vykonannia derzhavnogo biudzhetu za 2018 rik. *Ofitsiynyi sait Derzhavnoi kaznacheiskoi sluzhby Ukrainy*. Available at: <https://www.treasury.gov.ua/ua/file-storage/richnij-zvit-pro-vikonannya-derzhavnogo-byudzhetu-ukraini-za-2018-rik>

REPORTS ON RESEARCH PROJECTS

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ENTERPRISE COMMUNICATION POLICY INDICATORS ANALYSIS AS A PART OF MARKETING AUDIT

page 51–54

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The object of research is the process of marketing audit communication policy of the enterprise. The theoretical basis and methodological basis of this research are the fundamental tenets of modern marketing, the communication policy of the enterprise, the achievements of scientists regarding the theoretical and applied foundations of the marketing audit and the use of advertising management. In the course of the study, general scientific and special methods were used, namely: a system-functional approach to the study of the essence of the notion «marketing audit», a method of generalization, analysis and synthesis, and a monographic method. The proposed use of the main direc-

tions of marketing audit of the communication policy of the enterprise, which should include advertising, public relations, sales promotion, direct marketing, participation in exhibitions, personal selling, sponsorship and integrated marketing communications. It is proved that they should be considered comprehensively, taking into account the peculiarities and the impact on the efficiency of the enterprise. Marketing audit provides an opportunity to compare various means of communication policy and choose the best option, taking into account the specifics of the enterprise. Due to this, a marketing communications system is proposed that effectively influences the target audience, corresponds to the nature of the product offered, the image of the enterprise, and provides the opportunity to get the greatest economic effect and the communicative impact on consumers. In contrast to the widespread marketing audit experience in Ukraine in the form of controlling marketing activities, the study proves the effectiveness of conducting audits in specific areas, in particular, the enterprise's communication policy. Such an approach will certainly be useful for carrying out independent monitoring of the activities of Ukrainian enterprises. In this paper, theoretical statements have been brought to the level of scientific and practical recommendations and can be used by industrial enterprises to increase the level of effectiveness of communication activities by conducting a marketing audit.

Keywords: marketing communication policy, enterprise communication efficiency, marketing audit, marketing activity.

References

1. Wilson, A. (2002). *The Marketing Audit Handbook: Tools, Techniques and Checklists to Exploit Your Marketing Techniques*. Kogan Page Business Books, 306.
2. Tiurin, D. V. (2012). *Marketingovii audit: kak ego organizovat i pravilno provesti*. Moscow: INFRA-M, 250.
3. Brownlie, D. (1996). Marketing audits and auditing: Diagnosis through intervention. *Journal of Marketing Management*, 12 (1-3), 99–112. doi: <http://doi.org/10.1080/0267257x.1996.9964403>
4. Morgan, N. A., Clark, B. H., Gooner, R. (2002). Marketing productivity, marketing audits, and systems for marketing performance assessment: integrating multiple perspectives. *Journal of Business Research*, 55 (5), 363–375. doi: [http://doi.org/10.1016/s0148-2963\(00\)00162-4](http://doi.org/10.1016/s0148-2963(00)00162-4)
5. Pererva, P. H. (2012). Innovatsiini tekhnologii provedennia marketynhovoho audytu na pidpriemstvi. *Visnyk Natsionalnoho tekhnichnoho universytetu «Kharkivskiy politekhnichnyi instytut»*. *Tematychnyi vypusk: Tekhnichnyi prohres i efektyvnist vyrobnytstva*, 4, 98.
6. Koriahina, S. V., Koriahin, M. V. (2014). *Marketynhovyi audit*. Kyiv: Tsentri uchbovoi literatury, 320.
7. Kotler, P. T., Armstrong, G. (2015). *Principles of Marketing*. Pearson, 736.
8. Kotler, P. T., Keller, K. L. (2011). *Marketing Management*. Pearson, 816.
9. Maslova, T. D., Bozhuk, S. G., Kovalik, L. N. (2007). *Marketing*. Saint Petersburg: Piter, 400.
10. Fedko, N. G., Fedko, V. P. (2001). *Povedenie potrebiteliv*. Rostov-on-Don: Feniks, 352.
11. Gerasimenko, V. V., Simonov, K. V.; Terasimenko, V. V. (Ed.) (2018). *Vystavochnii marketing*. Moscow: Ekonomicheskii fakultet MGU imeni M. V. Lomonosova; Prospekt, 360.
12. Kuchina, S. E., Kitchenko, O. M. (2016). The Analysis of Common Mistakes in Preparing a Business Plan. *Business Inform*, 12, 260–265.

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ACCOUNTING AND ANALYTICAL SUPPORT OF THE MARKETING OF THE COMMISSION OPERATION OF THE TRADE ENTERPRISES

page 55–57

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The object of research is commission operations of trade enterprises. In the course of research of scientific works of economists, devoted to the problems of accounting and analytical support of marketing, commission operations of trade enterprises used the methods of analysis and synthesis. And to determine the industry problems of accounting and cost analysis, induction and deduction methods were used. In the course of the study, methods of comparison and analogy were used when analyzing the experience of accounting and cost analysis and marketing risks. And in the process of analyzing the order of formation of the accounting and analytical system of enterprises, abstraction and concretization methods were used. The theoretical research was applied in the process of deepening the interpretation of the essence of the terms «trade» and «commission trade». It should be noted that the approach proposed in the work has a number of features for accounting and analytical support for managing marketing commission operations of trade enterprises. This approach should be considered as accounting and analysis subsystems. This is due to the fact that the distribution proposed in the work makes it possible to avoid risks in trading activities. It is the accounting and analysis subsystems that provide complete accounting and

analytical information. It is shown that an important point in trading activity is taking into account the views of consumers. The author agrees with the opinion of scientists who offer to take into account corporate information and are increasingly aware of the extent to which the functional areas of marketing and supply chains are becoming increasingly integrated. It is shown that functional integration provides for the coordination of activities oriented to supply and demand, and theoretically provides for the creation of two interrelated advantages for consumers: reduction of the marketing risk of buying and, ultimately, a higher level of consumer brand. This ensures the possibility of obtaining the necessary information for accounting and analytical support for marketing commission operations of trading activities.

Keywords: accounting and analytical support, commission operations, marketing risk, trading enterprises.

References

1. Kutsyk, P. O. (2008). *Orhanizatsiino-ekonomichnyi mekhanizm upravlinnia efektyvnistiu diialnosti pidpriemstv spozhychoi kooperatsii Ukrainy*. Poltava: RVV PUSKU, 96–102.
2. Maksymenko, D. V. (2012). Oblikovo-analitychne zabezpechennia stratezhichnoho analizu. *Visnyk Natsionalnoho universytetu «Lvivska politekhnika»*. *Menedzhment ta pidpriemnytstvo v ukraini: etapy stanovlennia i problemy rozvytku*, 722, 150–154.
3. *Risk Management Agency (RMA)*. United States Department of Agriculture (USDA). Available at: <http://www.rma.usda.gov>
4. *ASU Extension*. Alcorn State University. Available at: <https://www.alcorn.edu/academics/schools-and-departments/school-of-agriculture-and-applied-sciences/land-grant-programs/extension-and-outreach>
5. Chambers, R. J. (1966). Accounting and Analytical Methods: A Review Article. *Journal of Accounting Research*, 4 (1), 101–118. doi: <http://doi.org/10.2307/2490144>
6. Korol, S. V., Dorozhkin, A. V. (2005). Otsenka riska investitsionnykh proektov. *Imushchestvennye otnosheniia v Rossiiskoi Federatsii*, 11 (50), 86–93.
7. Kidon, V. (2000). Net komertsii bez riska. *Apteka*, 9 (230). Available at: <https://www.apteka.ua/article/10497>
8. Kirchoff, J. F., Nichols, B. S., Rowe, W. J. (2017). The impact of functional integration on perceived risk and consumer-based brand equity. *Journal of Strategic Marketing*, 27 (2), 136–150. doi: <http://doi.org/10.1080/0965254x.2017.1384746>
9. Mochernyi, S. V. (2002). *Ekonomichnyi entsyklopedychnyi slovnyk*. Kyiv: Vydavnychiy tsentr «Akademiiia», 530.
10. Andriushchenko, V. A., Lusta, I. S. (1999). *Prava spozhyvachiv v Ukraini*. Available at: <http://yport.inf.ua/prava-potrebiteliv-ukraine.html>
11. Atamas, P. Y. (2008). *Bukhhalterskyi oblik u haluziakh ekonomiky*. Kyiv: Tsentri uchbovoi literatury, 392.
12. Drozdova, O. H. (2014). Komisiina torhivlia – spetsyfichna forma torhovelnoi diialnosti. *Visnyk sotsialno-ekonomichnykh doslidzhen*, 2 (53), 56–60.

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ANALYSIS OF PROBLEMS OF ACCOUNTING RELIABILITY PROVISION IN CLUSTERS

page 58–60

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The object of research is theoretical and practical aspects of the formation of management reporting and the problematic issues of preventing accounting distortions in clusters. The question of assessing the quality of accounting information in particular, the nature and place of accounting information in cluster management, accounting in the management information system

of enterprises participating in the cluster, accounting and reporting tools are not sufficiently developed. The order of formation of accounting information and the preparation of management accounting reports in clusters are investigated, and the specifics of the quality of accounting information and the effectiveness of the accounting system are determined. In the process of research methods of generalization, systematization, and system analysis were used. Using these methods, the definition of the concepts «intracorporate management reporting», «unreasonable classification of expenses», and «accounting information» has been proposed. Also the main problems hampering the need to implement and automate a full-fledged management accounting system are grouped that would meet all the challenges and needs of modern business and suggested ways to solve them. Special attention is paid to the formation of information support for solving specific management problems. Despite some progress in the development (in particular, the basic principles of standardization) of accounting and reporting, there are serious problems regarding the adequacy of the methodological foundations of accounting for the current state of the market environment and the needs of users. Accounting systems do not fully ensure the proper quality and reliability of the information they form, which significantly limits the usefulness of this information. In the work, reliable financial statements are analyzed as an important tool for making sound and important management decisions in clusters. The research results will be useful when conducting an audit, including when planning an audit, as the accountant and the head of the company need to take into account the possible presence of distortions in the financial statements. And, on this basis, assess the risk of misstatement of financial statements and take measures to prevent such violations in the future.

Keywords: management reporting, cost accounting, falsification of financial indicators, accounting information, effectiveness of management decisions.

References

- Hlasov, P. V. (2018). Aktualnist zastosuvannya intehrovanoi zvitnosti v klasterakh. *Internauka*, 21. Available at: <https://www.inter-nauka.com/uploads/public/15449577024153.pdf>
- Wells, J. T. (2013). *Corporate Fraud Handbook: Prevention and Detection*. Wiley, 448.
- Kovacich, G. L. (2007). *Fighting Fraud: How to Establish and Manage an Anti-Fraud Program*. Cbutterworth-Heinemann, 360.
- The Association of Certified Fraud Examiners (2008). *The Report to the Nation on Occupation Fraud and Abuse*. Austin: ACFE, 19.
- Nahirska, K. Ye. (2010). Etapy formuvannya ta periodychnist podannia upravlinskoj zvitnosti. *Ekonomichni nauky. Seriya: Oblik i finansy*, 7 (25 (2)), 330–338.
- Kutsyk, P. O. (2014). Suchasne traktuvannya, sklad i osoblyvosti formuvannya upravlinskoj zvitnosti pidpriemstva. *Visnyk Natsionalnoho universytetu «Lvivska politehnika». Menedzhment ta pidpriemnytstvo v Ukraini: etapy stanovlenni i problemy rozvytku*, 797, 248–254.
- Fadieieva, I. H., Hryniuk, O. I. (2015). Suchasni aspekty upravlinskoj obliku vytrat na naftohazovydobuvnykh pidpriemstvakh: vitchyzniani ta zarubizhnyi dosvid. *Ekonomika ta derzhava*, 5, 38–42.
- Matrosova, V. O., Sablin, D. O. (2011). Analiz informatyvnosti finansovoi zvitnosti pidpriemstv. *Visnyk Natsionalnoho tekhnichnoho universytetu «KhPI»: Tekhnichniy prohres i efektyvnist vyrobnytstva*, 25, 165–168.
- Kurylo, O. B. (2013). Sutnist, pryntsyipy ta mekhanizm strukturuvannya vytrat promyslovykh pidpriemstv. *Visnyk Natsionalnoho universytetu «Lvivska politehnika». Menedzhment ta pidpriemnytstvo v Ukraini: etapy stanovlenni i problemy rozvytku*, 767, 39–44.
- Bubleinyk, V. A., Panna, I. O. (2010). Neustoika yak vyd zabezpechennia vykonannia zoboviazannia za zakonodavstvom Ukrainy. *Naukovyi visnyk Dnipropetrovskoho derzhavnogo universytetu vnutrishnikh sprav*, 1, 75–81.
- Hnylytska, L. V. (2016). Upravlinnia profesiinymy ryzykamy bukhhaltera v systemi ekonomichnoi bezpeky pidpriemstva. *Visnyk Cherkaskoho universytetu. Seriya: Ekonomichni nauky*, 3, 33–41.
- Orlova, V. K., Kafka, S. M. (2014). Bukhhalterskyi oblik zakinchietsia zvitnistiu, a MSFZ – pochynaiutsia z nei. *Visnyk Natsionalnoho universytetu «Lvivska politehnika». Menedzhment ta pidpriemnytstvo v Ukraini: etapy stanovlenni i problemy rozvytku*, 794, 208–211.
- Melnyk, Z. Yu. (2015). Falsyfikatsiia ta vykryvlenniia zvitnykh danykh: vidpovidalnist prychetnykh osob. *Aktualni problemy ekonomiky*, 7, 399–407.