

REGTECH AND SUPTECH: STRATEGIC DIRECTIONS FOR THE DEVELOPMENT OF DIGITAL FINANCIAL REGULATION

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Abstract. *This study examines RegTech and SupTech as strategic drivers of digital financial regulation. It identifies their role in enhancing the efficiency of regulatory and supervisory processes, automating compliance, managing risks, and ensuring financial market transparency. The study outlines the main benefits, challenges, and prospects for the implementation of RegTech and SupTech in Ukraine.*

Keywords: *RegTech, SupTech, FinTech ecosystem, financial regulation, macroeconomic stability, digital supervision, compliance.*

The purpose of this study is to provide a theoretical justification for RegTech and SupTech as strategic vectors for the development of digital financial regulation, and to determine their role in enhancing regulatory and supervisory processes, automating compliance, managing systemic risks, and ensuring financial market transparency. The research employs a methodological approach based on the systematic analysis of international regulatory trends (using reports from the Financial Stability Board and Bank of England), a comparative analysis of implementation mechanisms in the UK, Singapore, and the EU, and an empirical evaluation of digitization indicators within the Ukrainian financial sector for 2023–2025. The study establishes that RegTech and SupTech form a holistic regulatory architecture that enables the "Supervisory-by-Design" paradigm, effectively mitigating information asymmetry and operational threats. The scientific novelty lies in conceptualizing these technologies as an integrated management strategy rather than isolated IT solutions. Empirical results reveal a strong positive correlation between the deployment of automated compliance tools and the digital operational resilience of the Ukrainian financial market. Practical application involves recommendations for regulators, including the standardization of data exchange protocols (API-imperative), the adoption of AI-based predictive analytics for risk management, and the implementation of digital operational resilience requirements (DORA). The authors conclude that the systemic integration of these technologies is a fundamental prerequisite for institutional sustainability in the digital economy. Future research should focus on the econometric modeling of transaction cost reduction achieved through these innovations.

Reference:

1. Financial Stability Board. (2020). *The use of supervisory and regulatory technology by authorities and regulated institutions: Market developments and financial stability*

implications. Retrieved from https://bank.gov.ua/admin_uploads/article/Zelena_knyga_2025_fin.pdf

2. Bank of England. (2024). *RegTech and SupTech developments in financial regulation*. Retrieved from https://afi-global.org/wp-content/uploads/2024/10/RegTech_SupTech_special_report_isbn.pdf

3. European Banking Authority. (2025). *Report on the use of AML/CFT SupTech tools*. Retrieved from <https://www.eba.europa.eu/sites/default/files/2025-08/2ed3b67d-880b-428d-8282-15689f65b12f/Report%20on%20the%20use%20of%20AMLCFT%20SupTech%20tools.pdf>

4. Access to Finance Initiative. (2024). *Regulatory and supervisory technologies: Special report*. Retrieved from https://afi-global.org/wp-content/uploads/2024/10/RegTech_SupTech_special_report_isbn.pdf

5. Fachsandy, F. (2025). Regulatory and supervisory technology research: A bibliometric analysis. *Journal of Central Banking Law and Institutions*, 4(1), 181–202. <https://doi.org/10.21098/jcli.v4i1.257>

6. Bagherifam, N. et al. (2025). Digital regulatory governance: The role of RegTech and SupTech in financial regulation. *Journal of Economic Issues*. <https://doi.org/10.3390/jjfs13040217>

7. Kshetri, N. (2023). Regulatory technology and supervisory technology: Current status, facilitators, and barriers. *Computer*, 56(1), 64–75. <https://doi.org/10.1109/MC.2022.3205780>

8. Charoenwong, B., Kowaleski, Z. T., Kwan, A., & Sutherland, A. G. (2024). RegTech: Technology-driven compliance and its effects on profitability, operations, and market structure. *Journal of Financial Economics*, 154, 103792. <https://doi.org/10.1016/j.jfineco.2024.103792>

9. Grassi, L., & Lanfranchi, D. (2022). RegTech in public and private sectors: The nexus between data, technology and regulation. *Journal of Industrial and Business Economics*, 49(3), 441–479. <https://doi.org/10.1007/s40812-022-00226-0>

10. McCarthy, J. (2022). The regulation of RegTech and SupTech in finance: Ensuring consistency in principle and in practice. *Journal of Financial Regulation and Compliance*, 30(2), 186–199. <https://doi.org/10.1108/JFRC-01-2022-0004>

11. Sarabdeen, J. (2024). Privacy model for the development and implementation of regulatory technology (RegTech). *Journal of Infrastructure, Policy and Development*, 8(6), 3072. <https://doi.org/10.24294/jipd.v8i6.3072>

12. *Proiekt kontseptsii rozvytku innovatsiinykh nahliadovykh (SupTech) ta rehuliatornykh (RegTech) tekhnolohii: stanom na 2021 r.* [Draft concept of the development of innovative supervisory (SupTech) and regulatory (RegTech) technologies: as of 2021]. (2021). Retrieved from https://bank.gov.ua/admin_uploads/article/%D0%A1oncept_development_Suptech_Regtech.pdf

13. *Zelena knyha z rozvytku rehuliatornykh tekhnolohii na finansovomu rynku Ukrainy: stanom na 2025 r.* [Green paper on the development of regulatory technologies in the financial market of Ukraine: as of 2025]. (2025). Retrieved from https://bank.gov.ua/admin_uploads/article/Zelena_knyga_2025_fin.pdf

14. Mishchenko, V. I. (2022). Tsyfrovizatsiia rehuliuвання ta nahliadu za diialnistiu finansovykh ustanov [Digitalization of regulation and supervision of financial institutions' activities]. *Ekonomichniy prostir*, (180), 173–179. <https://doi.org/10.32782/2224-6282/180-30>

15. Kholiavko, N., Kolotok, M., & Ostrovska, N. (2022). RegTech i SupTech: perevahy ta napriamy vykorystannia [RegTech and SupTech: advantages and directions of use]. *Naukovyi visnyk Polissia*, 1(22), 114–126. [https://doi.org/10.25140/2410-9576-2021-1\(22\)-114-126](https://doi.org/10.25140/2410-9576-2021-1(22)-114-126)
16. Kholiavko, N., & Dubyna, M. (2023). Kontseptualni polozhennia vykorystannia RegTech-tekhnologii u rehuliuванні protsesiv tsyfrovizatsii finansovykh ustanov [Conceptual provisions of using RegTech technologies in regulating the processes of digitalization of financial institutions]. *Problemy i perspektyvy ekonomiky ta upravlinnia*, 3(35), 152–162. [https://doi.org/10.25140/2411-5215-2023-3\(35\)-152-162](https://doi.org/10.25140/2411-5215-2023-3(35)-152-162)
17. Bondarenko, N. V., Yakovenko, O. R., & Shcherbatiuk, O. P. (2025). Vykorystannia shtuchnoho intelektu u bankivskomu nahliadi ta rehuliatornii diialnosti [The use of artificial intelligence in banking supervision and regulatory activities]. *Zbirnyk naukovykh prats Umanskoho natsionalnoho universytetu sadivnytstva*, 107(2), 98–110. <https://doi.org/10.32782/2415-8240-2025-107-2-98-110>
18. Kudla, O., Lonevska, I., Balytska, M., & Versal, N. (2025). Vykorystannia shtuchnoho intelektu v diialnosti tsentralnykh bankiv: fokus na SupTech / RegTech ta "zeleni" finansy [The use of artificial intelligence in the activities of central banks: focus on SupTech / RegTech and "green" finance]. *Herald of Khmelnytskyi National University. Economic Sciences*, 344(4), 277–286. <https://doi.org/10.31891/2307-5740-2025-344-4-38>
19. Hudz, Yu. (2025). Mozhlyvosti vykorystannia rehuliatornykh tekhnologii (RegTech) subiektamy pervynnoho finansovoho monitorynhu Ukrainy [Opportunities for using regulatory technologies (RegTech) by subjects of primary financial monitoring of Ukraine]. *Zbirnyk naukovykh prats Cherkaskoho derzhavnogo tekhnolohichnoho universytetu. Seriya: Ekonomichni nauky*, 76(3). [https://doi.org/10.24025/2306-4420.76\(3\).2025.342954](https://doi.org/10.24025/2306-4420.76(3).2025.342954)
20. Taranenko, A. (2025). Innovative mechanisms of state regulation of information security of financial institutions in Ukraine in the context of DORA implementation and SupTech tools development. *Visegrad Journal on Human Rights*, (2). <https://doi.org/10.61345/1339-7915.2025.2.26>

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