The Impact of Digitalisation on the Efficiency of Business Processes in the Modern Economy

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***Abstract**. Digitalisation is among the most significant factors driving the development of the modern economy. It encompasses a broad array of technologies and solutions that transform the organisation of business processes, optimise resource utilisation, and create conditions for enhancing the competitiveness of companies. In today's world, where globalisation and rapid technological changes have become integral to economic activity, digitalisation is no longer merely a competitive advantage – it has become a strategic necessity for ensuring the long-term sustainability of businesses. The implementation of digital technologies facilitates the automation of routine processes, reduces costs, enhances labour productivity, and improves the accuracy and speed of decision-making. For example, the adoption of cloud computing ensures easy access to real-time data, big data analytics provides deeper insights into customer needs, and artificial intelligence (AI) optimises the execution of complex tasks. The Internet of Things (IoT) is revolutionising manufacturing processes, while blockchain creates new opportunities in finance, logistics, and data security. In addition to enhancing operational efficiency, digitalisation has a significant impact on the strategic aspects of organisational activities. It opens up opportunities for the development of new business models and the creation of additional revenue streams. For instance, the adoption of digital commerce platforms or subscription-based models enables firms to significantly expand their customer base and maintain continuous customer engagement. However, the process of digitalisation is accompanied by significant challenges. These include the need for employees to adapt to new technologies, the high cost of implementing innovations and cybersecurity issues such as data protection. Despite these challenges, the benefits of digital transformation are clear, as they open up new opportunities for economic growth and innovation. This article aims to analyse the impact of digitalisation on the efficiency of business processes, identify the key technologies driving digital transformation, and assess its broader significance for the economy. Particular attention shall be given to both the benefits and the challenges encountered by organisations in their journey towards digital transformation.*

***Keywords:** digitalisation, digital transformation, technologies, cybersecurity, IT, AI, IoT, business.*

***JEL Classification:** L86, M21, O33*

1 Introduction

Digitalisation has emerged as a pivotal driver of contemporary economic development, fundamentally reshaping the organisation of business processes, the utilisation of resources, and the maintenance of competitive advantage. As the world becomes increasingly interconnected, the adoption of advanced technologies is no longer an option but a necessity for businesses seeking long-term sustainability and growth. The rapid pace of technological innovation and the integration of digital tools across various sectors have

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redefined operational, strategic, and organisational frameworks globally. Organisations now face the dual challenge of adopting cutting-edge technologies, including cloud computing, big data analytics, artificial intelligence (AI), blockchain, and the Internet of Things (IoT), whilst addressing critical issues such as cybersecurity, data privacy, and a shortage of skilled IT professionals.

In 2023, global trends in technology adoption revealed a heightened inclination among organisations to innovate their operational frameworks. However, this progression is tempered by a significant shortfall in skilled IT personnel, which constrains the ability of businesses to fully leverage digital tools. Moreover, as reliance on digital systems grows, the risk of cyberattacks has become increasingly acute. A substantial proportion of organisations worldwide have reported experiencing severe cyber incidents over the past decade, particularly between 2014 and 2023. This dual challenge of adopting digitalisation while addressing its associated risks has emerged as a central concern for organisations worldwide.

The aim of this study is to examine the impact of digitalisation on the efficiency of business processes, with particular attention to technological trends, challenges, and strategic approaches to implementing new technologies within the modern economy. This research investigates the influence of digitalisation on key dimensions, including operational efficiency, business model innovation, strategic decision-making; the technological innovations underpinning this transformation, such as cloud computing, AI, big data, and IoT, will also be examined, along with the challenges related to cybersecurity and the growing need for IT expertise.

The study employs a mixed-methods research design, combining qualitative and quantitative approaches. It integrates a comprehensive literature review, case studies, and empirical data to provide a nuanced understanding of the implications of digitalisation for business performance and competitiveness.

The overarching aim is to offer a detailed analysis of how organisations can effectively integrate digital technologies into their operations while navigating the associated challenges. The paper will also identify the strategic decisions necessary for maintaining competitiveness in the digital economy, thereby contributing to the academic discourse on digital transformation.

This research endeavours to provide actionable insights for business leaders, policymakers, and academics, enhancing their understanding of the transformative potential of digital technologies and the complexities involved in their implementation.

2 Analysis of Recent Research and Publications

Digitalisation research explores critical aspects of digital transformation, including automation, resource optimisation, the adoption of innovative technologies, and their impact on productivity and competitiveness. Particular attention is given to technologies such as AI, big data analytics, cloud computing, and IoT, which are reshaping traditional approaches to global business management.

The digitalisation of business processes in industrial enterprises, particularly the integration of digital technologies in customer interactions, internal infrastructure management, and value proposition development, is analysed in the works (Zub P., Kalach H., 2021). The authors underscore that digital transformation significantly enhances business process automation through advanced information systems and advocate for the creation of digital transformation roadmaps to better allocate resources to high-potential areas of development.

The implications of digitalisation for business and management are examined in the studies (Khadzhynov I. V., Ishchuk A. Ye., 2023). Their findings identify the benefits, challenges, and risks associated with implementing digital technologies in business process management. The authors highlight the transformative effects of digitalisation on core management functions, including planning, organisation, motivation, and control. For instance, they observe its influence on planning through driver-based budgeting, its impact on organisational structures and remote working arrangements on employee motivation, and its role in enhancing control via customer interaction and business analytics.

Trends in digitalisation and their role in business process management are explored in the research (Dolha H., Khtyrova O., 2024). The authors emphasise the pivotal role of digital technologies in managing business processes within the context of Industry 4.0. They further examine the trends shaping these processes, drawing on contributions from both Ukrainian and international scholars to provide insights into global digitalisation trends.

The transformative influence of digitalisation on business strategies and models is investigated (Matoušková D., 2022). The author highlights the growing recognition among modern organisations of the critical link between success and the adoption of advanced technologies, which are driving changes in competition, operations, and overall enterprise performance.

The relationship between digitalisation and the achievement of the United Nations Sustainable Development Goals (SDGs) is addressed in the

work of (Bikan B., Brem A., 2020). The authors stress the importance of adapting business practices to tackle economic and environmental challenges. However, they also note ambiguities in terms such as "digital business models," "digital transformation," and "digital entrepreneurship," which complicate their conceptualisation and practical application.

Finally, the potential of SMEs to enhance outcomes through innovative business models in the context of digital transformation is studied by (Bouwman H., Nikou S., Mark Reuver D., 2019). The authors highlight that while digitalisation necessitates significant adjustments to business models, SMEs often face constraints related to time and resources, which can limit their capacity for experimentation and the adoption of new strategies.

3 Presentation of the Primary Research Material

Digitalisation represents a pivotal force in contemporary economic development, fundamentally transforming business processes to enhance efficiency, adaptability, and competitiveness. Through the integration of digital technologies, organisations are able to optimise resource utilisation, automate routine tasks, improve customer engagement, and foster the creation of innovative business models. In the context of globalisation and accelerated digital transformation, the importance of digitalisation is increasingly evident across diverse economic sectors. This research examines the impact of digitalisation on the efficiency of business processes, with a focus on identifying key trends and addressing associated challenges.

Moreover, digitalisation drives the development of advanced technologies that act as critical enablers for informed decision-making and cost optimisation. However, the adoption of these technologies is not without difficulties. Key challenges include a shortage of skilled professionals, cybersecurity threats, and significant implementation costs, all of which necessitate meticulous strategic planning and management (Figure 1).

Data on the adoption of emerging technologies by organisations worldwide in 2023 reveal overarching trends in their integration. The analysis indicates that the majority of organisations are at an advanced stage of large-scale implementation of modern technologies, with only a minimal proportion yet to consider their adoption.

The majority of organisations are now fully deploying technologies such as cloud computing, big data analytics, the Internet of Things (IoT), artificial intelligence (AI), green energy solutions, blockchain, and others. This reflects the high maturity of these technologies and their substantial practical value for businesses. A notable proportion of organisations are employing these technologies on a limited scale. This cautious approach indicates either the testing of specific applications within the business or a phased strategy towards broader integration. A small percentage of organisations remain at the initial stages of technology testing, suggesting that most have either progressed beyond

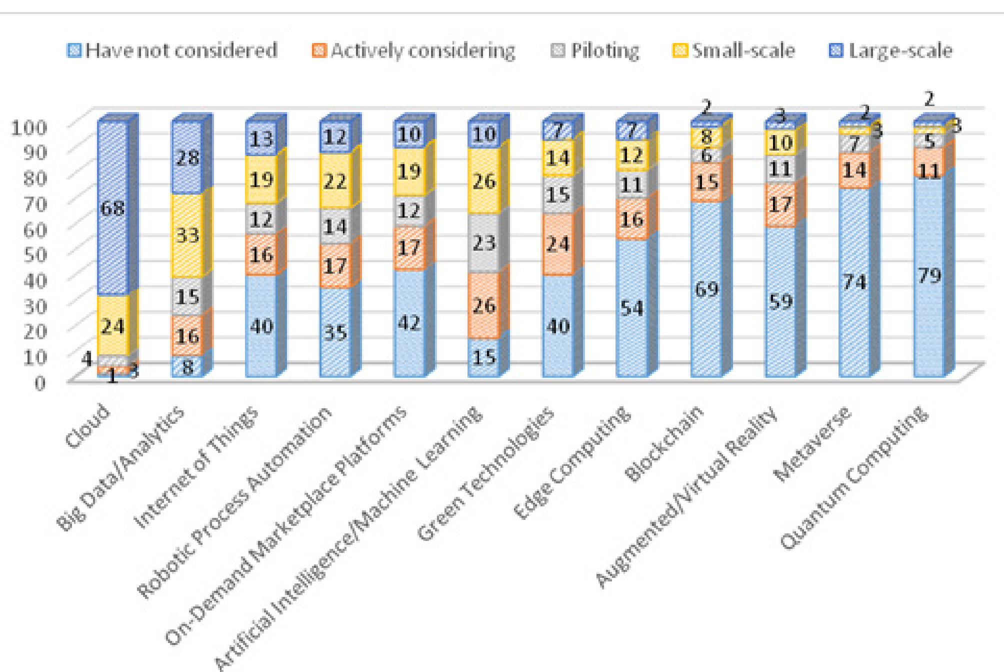

Figure 1 Implementation of new technologies in companies around the world 2023, %

Source: built by the authors on the basis of the Statista.com database

this phase or have not yet commenced engagement with particular innovations. A very limited number of organisations are currently assessing the feasibility of adopting these technologies. This underscores their widespread acceptance and recognition as essential tools for contemporary business.

The near-universal engagement with these technologies is evidenced by the fact that almost all organisations are either actively implementing or considering their integration. The minimal lack of interest, at approximately 1%, highlights their significance and near-total acceptance within the business landscape.

These findings demonstrate that technologies such as cloud computing, AI, big data, the IoT, and Block Chain are increasingly integral to the operational frameworks of most organisations. Their widespread adoption reflects a high level of digital maturity across the business environment in 2023. However, organisations at earlier stages of implementation face challenges in scaling these solutions effectively to realise competitive advantages (Figure 2).

The most acute shortage is observed in the field of cybersecurity, accounting for 43% of unmet demand. This is driven by the escalating frequency and sophistication of cyber threats, the rising incidence of attacks on businesses, and the increasingly stringent requirements for data protection within the digital economy. The persistent gap in cybersecurity expertise can be attributed to the complexity and extended duration of specialist training programmes.

A significant deficit also exists among data processing and analysis professionals, comprising 40% of the shortage. This reflects the growing reliance on big data analytics for strategic decision-making. Despite the increasing demand for such expertise, the labour market has struggled to supply a sufficient number of qualified professionals to meet organisational needs.

The need for technical architects (34%) and DevOps specialists (32%) stems from the transition of organisations towards more flexible and modern working methodologies. Technical architects play a critical role in establishing IT infrastructure, while DevOps specialists are essential for automating development and deployment processes.

Cloud technologies, development, and enterprise architecture each account for 28% of the shortage. This demand highlights the rapid proliferation of digital solutions, particularly cloud platforms, which now underpin many modern business processes. However, the scarcity of skilled personnel in these domains continues to hinder the effective implementation of these technologies.

Despite the rising prominence of artificial intelligence, there remains a 26% shortage of specialists in this field. Such roles require advanced expertise in programming, mathematics, machine learning, and big data, creating barriers to workforce development in this area.

Project management (25%) and business analysis (26%) are also areas of significant shortfall, primarily due to the need for professionals who possess a unique combination of technical expertise and organisational acumen. These skill sets are increasingly critical, particularly within the context of digital transformation initiatives.

While demand is comparatively lower for automation, agile methodologies, and change management (18–21%), these competencies remain

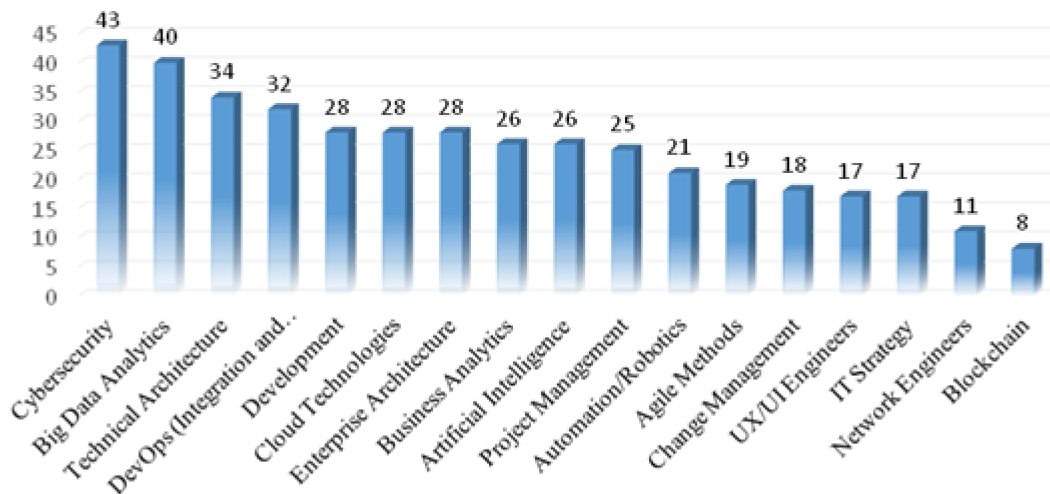

Figure 2 The IT skills shortage facing IT leaders around the world, %

Source: built by the authors on the basis of the Statista.com database

vital for enabling organisations to adapt swiftly to evolving conditions. The identified shortage suggests that many companies lack the necessary expertise to implement these transformations effectively.

UX/UI engineers (17%) and IT strategy professionals (17%) highlight the importance of user-centred design and comprehensive digital strategy development. Conversely, the relatively lower shortage of network engineers (11%) and blockchain specialists (8%) indicates that these fields are either less prioritised or supported by a larger pool of qualified professionals.

The data underscore a critical imbalance between the demand for IT professionals and their availability within the labour market. The most pronounced shortages are observed in areas that are pivotal to security, analytics, automation, and system architecture. Addressing these gaps necessitates significant investments by organisations in workforce development, partnerships with educational institutions, and the implementation of employee retraining initiatives.

Furthermore, while prior research has outlined the extent of the IT skills shortage, it is equally crucial to examine the consequences of this disparity, including the notable increase in cyberattacks experienced by global organisations between 2014 and 2023 (Figure 3).

An analysis of the proportion of global organisations experiencing major cyberattacks between 2014 and 2023 reveals significant trends over the period. From 2014 to 2018, there was a steady increase in the share of organisations affected, peaking at 33% in 2018. This upward trajectory underscores the growing frequency and sophistication of cyberattacks during those years. Following this peak, the proportion of affected organisations stabilised at approximately 30%, with minor fluctuations. A temporary decline to 27% in 2020 is likely linked to the COVID-19 pandemic, as the shift to remote operations may have reduced the number of viable targets. However, the figure rose again to 28% in 2022.

In 2021, the proportion decreased to 24%, reflecting potential improvements in cybersecurity measures and organisational responses to earlier incidents. This decline also suggests that many organisations adopted enhanced protection strategies in response to increased awareness of cybersecurity risks. By 2023, the proportion of organisations impacted by major cyberattacks had further reduced to 23%. This decline indicates ongoing progress in strengthening cybersecurity measures. However, it may also reflect the increasing sophistication and targeted nature of cyberattacks, which could obscure traditional metrics used to evaluate the prevalence of such incidents.

Overall, the data reveal that cyber threats have remained a persistent and evolving challenge for global organisations over the last decade. Although the proportion of affected organisations has decreased in recent years, this trend likely represents a combination of enhanced cybersecurity practices and changes in the nature of cyber threats. The shift towards more targeted and complex attack methods highlights the need for organisations to continuously refine their defence strategies to address these emerging challenges effectively.

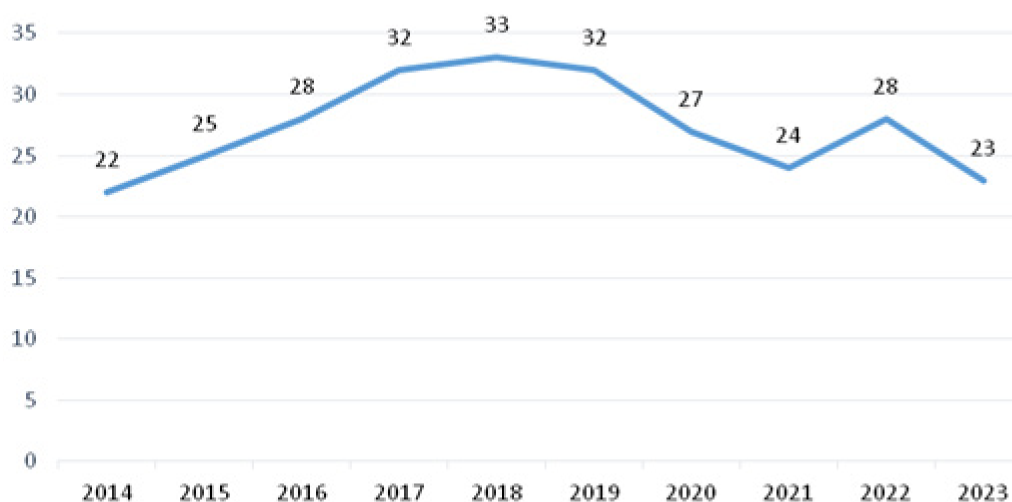

Figure 3 Share of global organizations
that suffered major cyberattacks in the last two years from 2014 to 2023, %

Source: built by the authors on the basis of the Statista.com database

4 Conclusions

The persistent shortage of IT expertise in critical domains such as cybersecurity, big data analytics, and cloud technologies underscores the urgent necessity of investing in workforce development to enable the effective integration of advanced technologies into organisational processes. This skills deficit poses a potential risk to organisations' capacity to adapt to the rapidly evolving technological landscape and maintain competitive advantages.

The increasing prevalence of major cyberattacks highlights the critical need for ongoing advancements in cybersecurity strategies. The escalating sophistication of these attacks necessitates the adoption of innovative approaches to safeguarding data and resources by both organisations and governmental bodies.

Data on technology adoption in 2023 indicate that the majority of organisations have entered the stage of large-scale deployment of innovations, including cloud computing, big data analytics, the Internet of Things (IoT), artificial intelligence (AI), blockchain, and related technologies. This trend reflects a high degree of digital maturity within the business sector. However, a subset of organisations remains in the pilot testing or cautious adoption phases, likely due to constraints in resources or the need for adaptation to specific operational conditions.

Future directions for development should focus on the following:

1. Investigating the efficacy of workforce training and qualification programmes is crucial to bridging the skills gap and supporting the seamless integration of advanced technologies into business operations.
2. Continued development of innovative cybersecurity solutions, such as leveraging AI for attack detection and prevention, is imperative to mitigate risks, particularly given the increasing complexity of cyber threats.
3. Research into the factors influencing the successful scaling of digital technologies is essential for understanding how organisations can optimise their deployment to achieve competitive business advantages.

In conclusion, digitalisation has emerged as a transformative force in enhancing the efficiency of business processes within the modern economy. By enabling automation, optimising resource utilisation, and fostering innovation, it not only streamlines operational activities but also drives strategic growth and competitiveness. However, the successful integration of digital technologies requires addressing critical challenges, including skills shortages, cybersecurity risks, and the complexities of technological adoption. As organisations continue to navigate these dynamics, digitalisation remains pivotal in shaping sustainable economic development and redefining traditional business paradigms.

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Overview of Compliance of Ukraine Tax Legislation With the Requirements of the EU Directives

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***Abstract**. The article is devoted to assessing Ukraine's commitments regarding the harmonization of its tax legislation with the requirements of the European Union Directives. The study underscores the significance of this process as part of Ukraine's integration into the European economic area, highlighting the necessity of aligning national fiscal policies with EU standards to foster mutual trust, economic stability and sustainable development. The relevance of this topic stems from Ukraine's aspiration to deepen cooperation with the European Union and the strategic importance of adopting uniform tax regulations to ensure transparency, fairness and efficiency in taxation. The primary aim of the research is to identify the scope and evaluate the current status of Ukraine's legislative efforts in achieving compliance with EU tax directives. The methodological approach includes systematic analysis, comparative legal analysis and qualitative assessments. The results of the study reveal significant progress in Ukraine's legislative initiatives to align with EU directives, particularly in areas such as VAT and corporate profit tax. However, the research identifies several gaps where further alignment is required. Implementing certain EU directives may require amending other Ukraine legislative acts. In particular, implementing rules on arbitration processes may require amending the Constitution of Ukraine; implementing Directives on cross-border mergers of enterprises will require changes to civil legislation. The article's practical value lies in its potential to inform policymakers, civil servants and other stakeholders involved in the tax harmonization process about the current inconsistency with the requirements of the EU Directives and underline such discrepancies. Moreover, the insights provided can serve as a framework for developing strategic roadmaps aimed at bridging identified gaps and achieving full harmonization. The harmonization process is not solely a legal or technical endeavor. By aligning its tax system with EU standards, Ukraine can pave the way for increased foreign investment, improved business climates and enhanced trade relations.*

***Keywords:** fiscal policy, tax harmonization, European Union Directives, European integration, corporate profit tax, value added tax, excise duty.*
***JEL Classification:** E62, E63, H87*

1 Introduction

The Preamble to the Constitution of Ukraine clearly defines the irreversibility of Ukraine's European and Euro-Atlantic course (Constitution of Ukraine, 1996). The harmonization of tax legislation with EU requirements and standards is one of the mandatory elements of European integration. To date, the main EU legislation on taxation is represented by about 20 Directives, half of which relate to the administration of VAT and excise duty. In the course of further work on improving the budgetary and tax instruments used under martial law, the guidelines of these EU Directives have to be taken into account.

Various authors have already reviewed the compliance of certain provisions of the Tax Code of Ukraine (further – TCU) with the EU Directives. In particular, N. Holovai, S. Bei highlighted the main directions of harmonisation of the tax legislation of Ukraine with the requirements of the EU Directives (Holovai & Bei, 2024); Y. Gaidai studied certain issues of non-compliance of indirect taxes with the EU guidelines (CES, 2023); L. Kasianenko and N. Atamanchuk reviewed the differences in excise duty taxation (Kasianenko & Atamanchuk, 2020); A. Monaienko, N. Atamanchuk, M. Kuts made a detailed analysis of the compliance of excise duty on energy products with the requirements of the relevant EU Directive (Monaienko & Atamanchuk & Kuts, 2024). At the same time, further systematisation of the existing inconsistencies in all taxes with the requirements of the EU Directives,

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which are mandatory for implementation by Ukraine, seems to be advisable.

The novelty of this research lies in its comprehensive assessment of Ukraine’s obligations to harmonize its tax legislation with the requirements of the European Union’s tax directives. This topic is particularly relevant given Ukraine’s ongoing European integration process and the increasing importance of aligning national fiscal policies with EU standards. The adoption of uniform tax regulations is a critical step in fostering economic stability, transparency and fairness, which are prerequisites for deeper cooperation between Ukraine and the EU.

The aim of this study is to evaluate the scope and implications of Ukraine’s commitments to harmonize its tax laws with EU directives, with a focus on identifying existing gaps. The research tasks include analyzing the current state of Ukrainian tax legislation and assessing its compliance with EU directives. Particular attention is given to directives on corporate profit tax, VAT, excise duties and measures to combat tax evasion, as these areas represent both progress and ongoing challenges for Ukraine.

The methodology of this research is based on a combination of systematic analysis, comparative legal studies and qualitative assessments. The study also integrates a critical analysis of Ukraine’s legislative framework, considering the unique challenges posed by martial law and the need for flexible fiscal policies.

The logic of presenting the research material is structured as follows: the introduction outlines the relevance, novelty and objectives of the study; the subsequent sections analyze the compliance of Ukrainian tax legislation with EU directives, focusing on specific areas such as direct and indirect taxation; and the conclusions summarize the findings.

In conclusion, the harmonization of Ukraine’s tax legislation with EU directives is not only a legal obligation but also a strategic necessity for fostering economic growth, enhancing international cooperation and advancing Ukraine’s European integration ambitions. By addressing the identified challenges and implementing the proposed solutions, Ukraine can make significant progress toward achieving these goals.

2 Analysis of Ukraine's tax legislation compliance with EU Directives on direct taxation

The main EU Directives concerning the calculation and payment of corporate income tax and general tax administration include the following:

1. Council Directive 2003/49/EC of 3 June 2003 on a common system of taxation applicable to interest and royalty payments made between associated companies of different Member States. The Directive provides the abolition of taxation of interest and royalty payments between associated companies of different Member States in the Member State where they arise and ensures that these payments are subject to taxation once in the Member States (Council Directive 2003/49/EC, 2003). TCU provides the payment of 15 % withholding tax on the payment of income to a non-resident in the form of interest or royalties. The tax rate may be reduced based on a valid double tax treaty. Ukrainian law does not provide a separate exemption from taxation of interest or royalties paid to related parties – EU resident. Accession to the Directive will result in additional losses of budget revenues.

2. Council Directive 2011/96/EU of 30 November 2011 on the common system of taxation applicable in the case of parent companies and subsidiaries of different Member States. The Directive provides the exemption from taxation of dividends paid by subsidiaries to their parent companies and the elimination of double taxation of such income at the parent company level (Council Directive 2011/96/EU, 2011). The TCU provides the payment of 15 % withholding tax on income paid to non-residents in the form of dividends. The tax rate may be reduced based on a valid double tax treaty. Ukrainian law does not provide a separate exemption from taxation of dividends paid to a parent company resident in the EU. Accession to the Directive will result in additional losses of budget revenues.

3. Council Directive (EU) 2016/1164 of 12 July 2016 laying down rules against tax avoidance practices that directly affect the functioning of the internal market (ATAD Directive). The Directive provides the following approaches to combat tax evasion practices:

– restrictions on the deduction of interest. The rule provides restrictions on the deductibility of interest expenses in order to prevent tax optimization through the payment of excessive interest. The Directive limits the deductibility of interest at the level no more than 30 % of a taxpayer's EBITDA. In order to reduce the administrative burden without significantly reducing their tax effect, a safe harbor rule may be provided, according to which interest can tax deducted within a certain fixed threshold;

– taxation of capital gains on the disposal of assets. Capital gains taxes on the disposal of assets are designed to ensure that if a taxpayer moves its assets or tax residence outside the tax jurisdiction of a state, that state taxes the economic value of any

capital gains generated in its territory, even if those gains have not yet been realized at the time of the move. Thus, the Directive describes the cases when taxpayers are subject to such rules, the mechanism for calculating and paying the tax;

– General anti-abuse rules (GAAR). GAAR rules are applied to combat tax abuses that have not been regulated by special provisions of tax legislation. GAAR used as a gap-filling measure that should not affect the application of specific anti-abuse rules. Within the EU, GAAR usually applied to artificial transactions;

– controlled foreign companies rules (CFCs). The CFC rules provide the redistribution of income of a controlled subsidiary in a low-tax country to the controlling person, which results in the taxation of this income in the country of residence of the controlling person. In order to reduce the administrative burden and compliance costs, tax exemptions for companies with low profits or low profitability might also be acceptable;

– rules on hybrid mismatches. Hybrid mismatches result from differences in the legal qualification of payments in two different jurisdictions. Such mismatches often result in double deduction (i.e. deduction in both states) or deduction of income in one state without inclusion in the tax base in the other. In order to neutralize the effects of hybrid mismatches, it is necessary to establish rules according to which one of the two jurisdictions in which the mismatch arose should refuse to deduct the payment that led to such a result (Council Directive (EU) 2016/1164, 2016).

It should be noted that the adoption of the Law of Ukraine “On amendments to the Tax Code of Ukraine on improving tax administration, eliminating technical and logical inconsistencies in tax legislation” № 466 dated 16.01.2020 introduced into Ukrainian legislation several concepts provided by the BEPS Action Plan developed by the OECD, in particular: limitation of interest deduction, rules for taxation of CFCs, etc. However, the implemented rules differ in many aspects from the approaches provided by the ATAD Directive, which, as a result, narrows the scope of its application and reduces the effect of their implementation.

4. Council Directive 2009/133/EC of 19 October 2009 on the common system of taxation applicable to mergers, divisions, partial divisions, transfers of assets and exchanges of shares concerning companies of different Member States and to the transfer of the registered office of an SE or SCE between Member States. The purpose of the Merger Directive is to eliminate fiscal obstacles to cross-border reorganizations involving companies located in two or more states, to defer the payment of taxes on income, profits, capital gains due to business reorganization and to protect the tax rights of Member States (Council Directive 2009/133/EC, 2009). It should be noted that currently the Civil Code of Ukraine does not allow cross-border reorganization of enterprises. Therefore, in order to implement this directive, appropriate changes should be made to the corporate legislation in the first place.

5. Convention on the elimination of double taxation in connection with the adjustment of profits of associated enterprises (90/436/EEC). The Convention provides the introduction of an arbitration procedure to avoid double taxation.

If the tax authorities of different states do not agree on the procedure for collecting tax on the income of a company with branches in the other states within 2 years from the date of the taxpayer's application, the decision is made by an advisory commission consisting of a chairman, 2 representatives of the disagreeing tax authorities and an equal number of independent members. The commission must provide a decision on the avoidance of double taxation in the case.

The Convention contains provisions on the relationship between the arbitration procedure and the use of remedies under the national law of the respective states, such as judicial or administrative proceedings (Convention 90/436/EEC, 1990).

6. Revised Code of Conduct for the effective implementation of the Convention on the elimination of double taxation in connection with the adjustment of profits of associated enterprises (2009/C 322/01). The Code of Conduct defines practical aspects of the application of the Arbitration Convention, in particular for cases of triangular transfer pricing. The Code specifies the starting points for the three-year period for submitting a case to the competent state authority and the two-year period for establishing an advisory commission that will have to provide a decision on the elimination of double taxation. The Code defines the stages of the case consideration (list of independent persons, establishment of the advisory commission, functioning of the advisory commission, conclusion of the advisory commission). There are provisions related to collection of taxes and interest during the cross-border dispute resolution procedure (Code of Conduct 2009/C 322/01, 2009).

7. Council Directive (EU) 2017/1852 of 10 October 2017 on tax dispute resolution mechanisms in the European Union. The Directive is a supplement to the existing dispute resolution mechanisms provided for by the EU Arbitration Convention and the provisions of bilateral double tax treaties (MAPs). The Directive was developed to address

the shortcomings identified in the application of the Arbitration Convention, in particular with regard to access to the procedure, as well as the duration and efficient completion of the procedure. The Arbitration Convention allows tax authorities to apply to arbitration. The Directive provides the binding nature of the final decision for international tax disputes within the EU, as well as the possibility of active participation of the taxpayer in the process (Council Directive 2017/1852, 2017).

Currently, Ukraine is not a party to the EU Arbitration Convention. Moreover, accession to the said Convention may contradict the Constitution of Ukraine.

8. Council Directive 2011/16/EU of 15 February 2011 on administrative cooperation in the field of taxation and repealing Directive 77/799/EEC. Directive 2011/16 is a basic document on legal assistance in tax matters between EU countries, applicable to any taxes levied in EU member states at all levels, except for value added tax, customs duties, excise duties and social security contributions.

The Directive has been amended 6 times to strengthen administrative cooperation between Member States.

– Directive 2014/107/EU (DAC 2) introduced the automatic exchange of information on financial accounts (CRS);

– Directive 2015/2376/EU (DAC 3) on the automatic exchange of tax rulings and advance pricing agreements (APAs);

– Directive 2016/881/EU (DAC 4) on the automatic exchange of country-be-country reports between countries (CbCr);

– Directive 2016/2258/EU (DAC 5) on access to information on ultimate beneficial owners;

– Directive 2018/822/EU (DAC 6) on the automatic exchange of information on cross-border transactions subject to mandatory declaration;

– Directive 2021/514/EU (DAC 7) on the automatic exchange of information on income/turnover received by dealers (sellers) on digital platforms (Council Directive 2011/16/EU, 2011).

Ukraine has joined the automatic exchange of tax information under the CRS and CbCR standards, which are part of the Directive. In the future, Ukraine should also join the exchange of information on tax rulings, ultimate beneficial owners and cross-border transactions subject to mandatory declaration.

9. Council Directive 2010/24/EU of 16 March 2010 concerning mutual assistance for the recovery of claims relating to taxes, duties and other measures. The Directive sets out the rules under which Member States shall provide assistance for the recovery of any tax arrears that arise in another Member State (Council Directive 2010/24/EU, 2010). As of today, such rules are absent in the tax legislation of Ukraine.

10. Council Directive (EU) 2022/2523 of 14 December 2022 on ensuring a global minimum level of taxation for multinational enterprise groups and large-scale domestic groups in the Union. The Directive establishes rules to ensure a minimum level of effective corporate taxation for large multinational groups. The Directive concerns the harmonization of approaches to the taxation of large international business groups in the digital economy and aims to counteract the erosion of the tax base (Council Directive 2022/2523, 2022). Ukrainian legislation does not contain the provisions of this Directive.

3 Analysis of Ukraine's tax legislation compliance with EU Directives on indirect taxation

The main EU Directives concerning the calculation and payment of indirect taxes (VAT and excise duty) include the following:

1. Council Directive 2006/112/EC of 28 November 2006 on the common system of value added tax. The Directive establishes a common VAT system in the EU. It provides, in particular, the general approach to VAT taxation, the tax base and objects, tax rates, the list of transactions exempt from taxation and other provisions related to VAT taxation of taxable entities of the Member States (Council Directive 2006/112/EC, 2006).

Currently, most of the provisions of the TCU have already been harmonized with the Directive. At the same time, some provisions still need to be clarified to achieve full compliance with the requirements of the Directive. In particular, the list of existing tax exemptions and cases of application of the reduced VAT rate need to be revised in order to cancel those that are not mandatory in the EU. It is also necessary to bring the functionality of the existing VAT administration systems in line with the requirements of the EU VAT regulations.

2. Thirteenth Council Directive 86/560/EEC of 17 November 1986 on the harmonization of the laws of the Member States relating to turnover taxes – Arrangements for the refund of value added tax to taxable persons not established in Community territory. This Directive establishes detailed rules for VAT refunds to taxpayers registered in third countries and not operating in the EU (the entity was not registered in a Member State or did not have a permanent establishment through which it carried out its business activities).

The Directive provides the VAT refund procedure; the procedure and deadlines for

submitting applications for refund, the authorized authorities to accept them and the minimum amounts for which applications may be submitted; the procedure and deadlines for refunds; the content and justification of the application to avoid fraud, in particular, the obligation of the payer to provide proof that it is engaged in the relevant economic activity, etc (Thirteenth Council Directive 86/560/EEC, 1986).

Currently, the TCU does not contain relevant provisions.

3. Council Directive 2008/9/EC of 12 February 2008 laying down detailed rules for the refund of value added tax, provided for in Directive 2006/112/EC, to taxable persons not established in the Member State of refund but established in another Member State. The Directive establishes detailed rules of the VAT refund set in Article 170 of Directive 2006/112/EC to taxpayers who are not registered in the Member State of refund.

The Directive regulates the right of each Member State to refund to any taxpayer VAT charged in respect of goods or services supplied to it by other taxpayers in that Member State or in respect of imports of goods into that Member State; the procedure, deadlines for refunding VAT and other procedural matters (Council Directive 2008/9/EC, 2008).

Currently, the TCU does not contain relevant provisions.

4. Council Regulation (EU) No 904/2010 of 7 October 2010 on administrative cooperation and combating fraud in the field of value added tax. The said Regulation establishes the conditions for cooperation between the competent authorities of the Member States in the field of VAT; rules and procedures that will allow the competent authorities to cooperate and exchange information, in particular, to control the correctness of VAT taxation and to combat VAT fraud (Council Regulation 904/2010, 2010).

Currently, the TCU does not contain relevant provisions.

5. Council Directive 2008/118/EC of 16 December 2008 concerning the general arrangements for excise duty and repealing Directive 92/12/EEC. This Directive is the basic directive on excise duty collection.

It provides a mandatory list of excisable goods (alcohol, spirits, energy products, tobacco products); the establishment of a tax suspension regime, the provision of a financial guarantee to the tax authority and electronic control (Council Directive 2008/118/EC, 2008).

6. Council Directive 95/60/EC of 27 November 1995 on fiscal marking of gas oils and kerosene. The Directive provides the labeling of diesel and aviation fuel in order to control its intended use; empowering the controlling authorities to stop vehicles and check the presence of fuel in the fuel tank.

The Directive is not mandatory, states may be exempt from labeling fuel that is taxed at preferential rates if proper control is ensured (Council Directive 95/60/EC, 1995).

7. Council Directive 92/83/EEC of 19 October 1992 on the harmonization of the structures of excise duties on alcohol and alcoholic beverages. The Directive establishes a list and definition of alcoholic beverages that are excisable goods and tax rates for them (Council Directive 92/83/EEC, 1992).

In general, the provisions of the TCU regarding the structure of the excise duty on alcoholic beverages comply with the requirements of the Directive. The excise duty rates on alcoholic beverages are expected to be brought in line with the minimum rates in force in the EU by 2028.

8. Council Directive 2011/64/EU of 21 June 2011 on the structure and rates of excise duty applied to manufactured tobacco. The Directive establishes the list of tobacco products that are excisable goods; minimum excise duty rates on tobacco products; the ratio of specific and ad valorem rates; calculation of the weighted average retail price, which is the basis for revising the rates (Council Directive 2011/64/EU, 2011).

In general, the provisions of the TCU on the structure of the excise duty on tobacco products comply with the requirements of the Directive. However, in order to fully comply with the Directive, tobacco tax rates should be set in euros. The excise duty rates on tobacco products are expected to be brought in line with the minimum rates in force in the EU by 2029.

9. Council Directive 2003/96/EC of October 27, 2003 on the restructuring of the Community system for the taxation of energy products and electricity. The Directive establishes a list of fuels and energy products that are excisable goods (gasoline, diesel fuel, electricity, kerosene, gas, coal); minimum excise duty rates on fuel in the EU; exemptions from taxation (e.g., exemption of fuel for air transportation and inland water transport, which are not provided by the legislation of Ukraine) (Council Directive 2003/96/EC, 2003).

In general, the provisions of the TCU on the structure of the excise duty on energy products comply with the requirements of the Directive. However, the excise duty rates on fuel products are expected to be brought in line with the minimum rates in force in the EU by 2029.

4 Conclusions

The findings of this study highlight that while Ukraine has achieved significant progress in aligning its tax legislation with EU standards, substantial efforts are still required to ensure full compliance. The progress in areas such as VAT administration and combating with tax evasion demonstrates Ukraine's commitment to modernizing its fiscal policies and fostering greater transparency in taxation.

The implementation of certain directives will require legislative changes to other acts, including the Civil Code of Ukraine (regarding cross-border merger) and the Constitution of Ukraine (regarding the arbitration procedure).

In the area of excise duty, it has been determined that Ukraine's legislation largely corresponds to the relevant EU directives. However, there remains a need to align tax rates with the minimum levels established by these directives. Currently, Ukraine is gradually revise its excise duty rates to bring them in line with the minimum rates. Full alignment of the rates is expected in 2028–2029.

Ukraine's tax policy development must consider the provisions of EU directives, particularly when evaluating the feasibility of existing tax incentives. Special attention should be paid to the EU Directive on the global minimum level of taxation, which effectively diminishes the economic efficiency of certain tax incentives. That's why the relevance and impact of tax incentives implemented in Ukraine have to be reassessed within the broader context of fiscal alignment and global tax fairness. Policymakers must ensure that temporary tax measures introduced under martial law do not conflict with EU directives, thereby preserving the integrity of the harmonization efforts.

In conclusion, the alignment of Ukraine's tax legislation with EU directives is a complex, but indispensable component of the country's European integration. The findings of this research provide valuable insights to guide future legislative reforms. By intensifying efforts to achieve full compliance, including necessary legislative changes to key documents and aligning excise duty rates, Ukraine can strengthen its integration with the European Union and lay the foundation for sustainable economic growth.

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