



Digital Innovations in the Fiscal Policy of Ukraine: Promoting Sustainable Economic Development

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ABSTRACT

This study critically examines the nexus between tax legislation and digital innovation in Ukraine, focusing on the alignment of fiscal policy with the digital economy's growth. It analyzes the implications of Ukraine's tax reforms, including the Law "On Stimulating the Development of the Digital Economy in Ukraine," commonly referred to as the Diia City initiative, for promoting a robust digital economy. This research evaluates the effectiveness of these reforms in fostering digital advancements and their impact on sustainable economic development. Employing a comprehensive multidisciplinary approach, it researches into the theoretical and practical aspects of tax policies, particularly those targeting the digital sector. The findings suggest Ukraine's strategic positioning for leveraging digital innovation, underpinned by legislative reforms such as amendments to the tax code of Ukraine that cater to the IT industry through specific tax regulations through a conducive fiscal environment. This paper highlights the transformative potential of digital innovations and the critical need for tax legislation to evolve in tandem with technological advancements. Recommendations for ensuring the sustained success of Ukraine's digital and economic reform efforts emphasize the importance of addressing existing obstacles and perpetually refining fiscal policies.

Keywords: Digital Economy, Tax Reforms in Ukraine, Sustainable Economic Development, Blockchain Technology, Artificial Intelligence

JEL Classifications: E62, O33, O38, O47, Q01

1. INTRODUCTION

Ukraine is on a path to sustained economic growth through ambitious socio-economic reforms. However, this journey faces hurdles such as regulatory complexity, financial instability, and environmental risks, impacting fiscal policy and hindering effective social transformation. This context emphasizes the need for balanced tax subjects' rights and responsibilities and addresses the scarcity of energy and financial resources as primary challenges (Tretiak et al., 2023; Bushman, 2021). Traditional fiscal management strategies often fall short in adapting to economic dynamism (Irtysheva, 2021).

The merging paths of digital innovation and fiscal policies present unique challenges and opportunities in today's global landscape.

Digital technologies, such as blockchain and artificial intelligence (AI), promise a new era of fiscal policy characterized by enhanced security, transparency, and operational efficiency (Pantelieieva et al., 2018). These advancements not only propose solutions to traditional fiscal policy dilemmas but also offer innovative avenues for enhancing tax collection processes, reducing fraudulent activities, and improving overall fiscal transparency (Bezrukova et al., 2022; Bieliaieva et al., 2023; Bogachov et al., 2021; Slinko et al., 2021).

Observing the international adoption of blockchain, such as Turkey's integration for more transparent and accurate fiscal operations Burashnikova (2023), highlights the potential for Ukraine to tailor these technologies to its fiscal needs. The potential benefits of a more effective, transparent, and accountable fiscal

system are immense, potentially attracting foreign investment and fostering economic growth. This paper argues for understanding and application of digital technologies within Ukraine's fiscal environment to support its journey towards sustainable economic development (Bushman, 2021). The necessity for a framework that accommodates digital innovation within fiscal policy, tailored to Ukraine's unique context, emerges as a critical component for the nation's economic strategy.

2. LITERATURE REVIEW

Understanding the nexus between technological innovation and fiscal policy requires investigating into how technology reshapes economies and the governmental responses to these changes. Technological innovation is not merely the introduction of new gadgets or software; it's a multifaceted process that involves the creation, adoption, and diffusion of new technologies across various sectors of the economy. These innovations offer businesses the tools to access new markets, improve efficiency, and enhance product offerings, leading to revenue growth and increased competitiveness on a global scale. The work of Bezrukova et al. (2022) emphasizes that technological innovation acts as a catalyst for economic expansion by providing businesses with opportunities to exploit new markets and improve operational efficiencies. This process is critical for maintaining a competitive edge in the fast-paced global market, where technology-driven changes can rapidly transform industry landscapes. In the context of Ukraine, Bushman (2021) highlights the importance of digitalization the integration of digital technologies into all aspects of a country's economy and society. Digitalization facilitates the transition to sustainable economic growth by enabling the development of a digital economy, characterized by increased productivity, lower operational costs, and the creation of new value chains.

The rise of digital platforms exemplifies a significant technological innovation with profound impacts on the global economy. Digital platforms, such as e-commerce websites, social media, and cloud-based services, have revolutionized the way businesses operate. They have lowered entry barriers, democratized access to global markets, and facilitated the emergence of new business models, such as the sharing economy and platform-based services. According to Burashnikova (2023), these platforms have become engines of economic growth and development, contributing to job creation, enhancing consumer choices, and fostering innovation. For Ukraine, embracing digitalization is crucial for achieving long-term economic sustainability. The country's commitment to adapting to technological changes and embracing novel ideas is vital for navigating the challenges posed by the global digital revolution. This involves not just the adoption of new technologies but also the restructuring of the economy to support digital business models, ensuring access to high-speed internet across the country, and investing in digital skills training for the workforce. The intersection of technological innovation and fiscal policy is particularly noteworthy. As businesses and economies evolve in response to technological advancements, so too must the frameworks that govern them. Fiscal policy government actions regarding taxation and government spending must adapt to support the growth of the digital economy (Colquitt et al., 2022). This

means creating tax incentives for innovation, ensuring fair taxation of digital goods and services, and investing in digital infrastructure and education to support a skilled workforce capable of thriving in a technology-driven economy.

2.1. Fiscal Policy in the Digital Era

Fiscal policy, traditionally concerned with government revenue collection (taxation) and expenditure to influence the economic activities of a country, is undergoing a transformation in the digital era. Economists like Cai et al. (2023) highlight the impact of technological shifts and digital advancements on a nation's competitive stance on the global stage. The digital economy necessitates a reevaluation of traditional fiscal tools to ensure they are apt for the new economic landscape shaped by digital technologies. In response to digital innovation, adjusting the tax base becomes a critical strategy. As digital transactions and digital goods increase, countries must redefine what constitutes a taxable entity or activity. This involves identifying and taxing digital products and services, ensuring that the digital economy contributes its fair share to government revenues. The challenge lies in tracking and valuing digital transactions that may not fit traditional taxation models.

Tax credits and incentives are pivotal in fostering an environment conducive to innovation and digital growth. Choi and Lee (2018) discuss how targeted tax credits can incentivize businesses to invest in research and development (R&D) of new digital technologies, digital infrastructure, and cybersecurity measures. Such fiscal incentives are crucial for encouraging startups and established businesses to pursue innovative digital projects that can drive economic growth. Implementing special tax rates for the digital sector or for digital goods and services is another tool governments can use to support the digital economy. Kovalchuk et al. (2019) emphasize the importance of a balanced approach in applying special tax rates. While too high rates could stifle innovation and deter investment, strategically lower rates could attract digital businesses and stimulate the digital economy's growth. The challenge is to strike a balance that encourages growth without significantly diminishing tax revenues. An efficient tax system is essential for making informed economic decisions and maintaining economic stability. In the digital era, this involves adapting fiscal policies to address the unique characteristics of digital goods and services, such as their intangibility and the ease with which they can cross borders. The objective is to ensure a fair and effective taxation system that can support public services and infrastructure while fostering a thriving digital economy. For Ukraine, evolving its fiscal strategy to meet the demands of the digital age is critical. This entails not only adapting taxation policies to capture the value generated in the digital economy but also leveraging fiscal policy to stimulate innovation and digital entrepreneurship. Ukraine faces the dual challenge of modernizing its fiscal framework to ensure robust revenue streams and deploying fiscal tools strategically to support digital transformation and enhance its position in the global digital economy.

2.2. Legislative Framework and Objectives

At its core, the Diia City¹ is a comprehensive legislative framework

1 Diia City. A special tax and legal structure for Ukrainian IT companies <https://en.clc.co.ua/diia-city-ukraine/>

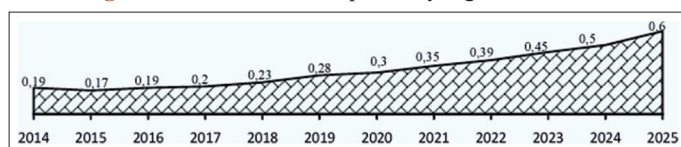
designed to catalyze the growth of Ukraine's digital economy. Its primary aim is not to introduce new taxes or modify existing tax structures in the traditional sense. Instead, the law focuses on creating a conducive environment for digital businesses and entrepreneurs, fostering innovation, and attracting investment in the tech sector. This is achieved through various incentives, regulatory simplifications, and support mechanisms targeted specifically at the digital economy sector. In Ukraine's taxation system for individuals and businesses, including those operating within the digital economy, is primarily based on the personal income tax system, along with corporate income taxes and VAT where applicable. The Diia City does not introduce a new category of payroll taxes but rather offers tax incentives and benefits designed to support the growth of digital businesses. For instance, companies registered under the project may benefit from reduced tax rates on certain activities or enjoy exemptions from some of the burdens that typically apply to traditional sectors. These incentives are aimed at making Ukraine an attractive destination for tech companies and startups, encouraging them to establish and expand their operations within the country.

The legislation encompasses specific fiscal policies tailored to nurture the digital economy's ecosystem. These include offering competitive tax rates for digital companies to enhance profitability and reinvestment in growth and innovation. Streamlining bureaucratic procedures and compliance requirements to make it easier for digital businesses to operate. Facilitating access to financing and investment for startups and tech companies looking to scale up their operations. The fiscal measures under the Diia City are thus strategically designed not just to tax but to stimulate and support the digital economy, recognizing the sector's potential to contribute significantly to Ukraine's economic development and global competitiveness. By correctly understanding the Diia City legislation's focus and mechanisms, stakeholders can better appreciate its role in shaping Ukraine's digital economic landscape. The law represents a forward-thinking approach to economic policy, where the government actively works to create a favorable environment for digital innovation and entrepreneurship. This legislative framework acknowledges the unique needs and challenges of the digital economy and seeks to address them through targeted fiscal policies and support measures.

2.3. Blockchain Technology and Digital Innovation

Blockchain technology's integration into various sectors, particularly financial systems, marks a pivotal advancement in digital innovation as depicted in Figure 1. This technology, fundamentally a decentralized and distributed ledger, records transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the consensus of the network. This inherent characteristic of blockchain offers several transformative benefits for financial operations and beyond, enhancing security, transparency, and efficiency.

Figure 1: Economic development by digital innovation



Blockchain technology's primary appeal lies in its ability to secure transactions and enhance transparency. Each transaction on a blockchain is encrypted and linked to the previous transaction, creating a chain of blocks that is nearly impossible to tamper. This ensures a high level of security for financial transactions, mitigating the risks of fraud and unauthorized alterations. Cunha et al. (2021) emphasize that this heightened security can significantly bolster trust in financial transactions, a critical factor in financial operations and international trade. The adoption of blockchain by financial institutions like PrivatBank, as noted by Ding et al. (2021), showcases the technology's potential to revolutionize financial operations. For instance, blockchain enables the execution of cryptocurrency transactions with unprecedented speed and reduced costs compared to traditional banking systems. This is particularly beneficial for cross-border transactions, which typically involve lengthy processing times and high fees. Its ability to streamline these transactions demonstrates its capacity to make financial services more accessible and efficient. Blockchain's impact extends beyond improving transaction efficiency; it also has the potential to reduce corruption and bureaucracy in commerce. The technology's transparency ensures that all transactions are visible and traceable by all parties involved, leaving little room for illicit activities and corruption. Moreover, blockchain automates many processes that traditionally require bureaucratic oversight, thereby streamlining operations and reducing the opportunities for corrupt practices. The experience of European countries, as highlighted by Foldy and Ospina (2023), illustrates how blockchain can simplify commerce, making it more straightforward and less susceptible to corruption.

The applications of blockchain technology are not confined to the financial sector. Its capabilities for secure and efficient data management have implications across various industries. For example, in supply chain management, blockchain can provide a transparent record of the journey of products from manufacturer to consumer, enhancing traceability and accountability. In the healthcare sector, blockchain can secure patient data while ensuring it is accessible to authorized personnel, improving both the security and efficiency of healthcare information management. The secure and efficient data management facilitated by blockchain technology represents a significant leap forward in digital innovation. By providing a tamper-proof, decentralized, and transparent method of recording transactions and managing data, blockchain technology offers a way to increase efficiency, reduce costs, and build trust across a wide range of industries and applications.

2.4. Addressing the Digital Economy and Fiscal Policy Interface

The interface between the digital economy and fiscal policy is a crucial nexus for fostering sustainable economic growth in the age of digital transformation. As digital technologies continue to evolve and permeate various sectors of the economy, their impact on productivity, efficiency, and innovation becomes increasingly significant. This relationship necessitates a reevaluation and adaptation of fiscal policies to support and leverage the potential of the digital economy. Digital technologies, characterized by their ability to process, analyze, and disseminate information at

unprecedented speeds and scales, are driving significant changes across all sectors of the economy. The “multiplier effect” of these technologies refers to their capacity to significantly enhance the productivity of other economic factors, such as labor and capital. For instance, the implementation of advanced data analytics can lead to better decision-making processes, while automation and AI can significantly increase production efficiency. Bezrukova et al. (2022) and Nezhyva et al. (2021) highlight the importance of these technologies in promoting high-quality economic growth that is both sustainable and inclusive.

Ukraine has recognized the strategic importance of the digital economy, particularly the IT services sector, as a key driver of economic growth. The country’s emphasis on developing this sector is evidenced by supportive policies and expected growth projections. According to Marchenko (2022), the government’s initiatives to enhance the IT infrastructure and create a favorable regulatory environment are expected to catalyze significant growth in this sector. These efforts are critical for attracting foreign investment, fostering innovation, and creating high-value jobs, thereby contributing to overall economic resilience and competitiveness. The application of digital technologies extends to that of fiscal policy, particularly in the areas of tax collection and fiscal management. The adoption of electronic excise tax stamps is a prime example of how digital solutions can streamline tax administration, reduce evasion, and increase government revenue. By ensuring that excisable goods are accurately tracked and taxed, such systems enhance fiscal stability and integrity (Ladonko et al., 2022; Rot et al., 2020). Furthermore, the development of a single digital communication system for tax purposes represents a significant leap forward in simplifying and making tax collection processes more efficient. This system facilitates seamless communication between taxpayers and tax authorities, reduces compliance costs, and improves the overall transparency of the tax system. These technological advancements in tax administration are instrumental in creating a more predictable and stable fiscal environment, which is essential for long-term economic planning and investment. By addressing the digital economy and fiscal policy interface effectively, Ukraine is laying the foundation for sustainable economic development. The integration of digital technologies in fiscal policies not only enhances the efficiency of tax collection and public expenditure management but also supports the growth of the digital economy itself. This synergy between fiscal policy and digital innovation is crucial for maximizing the benefits of the digital transformation for economic development.

2.5. Global Implications and the Ukrainian Context

The interplay between digitalization and fiscal policy has far-reaching implications, not just within individual nations but across the global economic landscape. For Ukraine, the integration of digital technologies into its fiscal strategies represents a significant step toward modernizing its economy and aligning with global standards. This move towards digitalization is pivotal for enhancing tax collection efficiency, a fundamental aspect that underpins the financial health of the state and its ability to fund public services and development projects. Digital technologies, by their very nature, streamline and automate processes, making

them more efficient and less prone to error. In the realm of tax collection, digitalization facilitates a more accurate and timely gathering of tax-related data, thereby improving overall efficiency. Okhrimenko et al. (2022) highlight the potential for increased state revenue through digital approaches, which is particularly relevant for countries looking to bolster their fiscal resources without imposing additional tax burdens on the population. The adoption of electronic systems for tax filing and payment, for example, not only reduces administrative costs but also makes it easier for businesses and individuals to comply with tax regulations. This ease of compliance can lead to higher rates of voluntary tax filing and payment, further increasing tax revenues without the need for more aggressive enforcement measures.

The digital economy presents unique challenges for tax authorities, especially in areas like e-commerce and peer-to-peer (P2P) services, where traditional tax collection mechanisms may fall short. Mishchenko et al. (2019) and Tretiak et al. (2023) discuss how the wealth of data generated by digital transactions provides tax authorities with the tools to improve compliance and target enforcement efforts more effectively. Advanced analytics and machine learning algorithms can analyze transaction data in real time, identifying patterns that may indicate tax evasion or avoidance. This ability to scrutinize data at scale allows tax authorities to pinpoint non-compliance with a higher degree of accuracy, focusing their enforcement efforts where they are most needed. Moreover, the transparency inherent in digital transactions reduces the opportunities for undeclared economic activity, further bolstering tax compliance.

Ukraine’s focus on enhancing its IT services sector and adopting digital technologies for fiscal purposes reflects a broader recognition of the critical role digital advancements play in national economic strategy. Marchenko (2022) points out the expected growth projections for Ukraine’s IT services sector, underscoring the importance of digital technologies in driving economic development. The implementation of electronic excise tax stamps, as noted by Ladonko et al. (2022), and the development of a single digital communication system (Rot et al., 2020) are practical examples of how digitalization can improve tax collection and administration. These measures not only facilitate a more streamlined tax collection process but also enhance fiscal stability by providing the government with a more reliable and predictable revenue stream.

2.6. Overcoming Challenges for a Digital Future

Navigating through the labyrinth of challenges to embrace a digital future, Ukraine stands at a critical juncture that necessitates a harmonized effort across technological, legal, and organizational realms. The integration of digital advancements into the nation’s fiscal policy framework presents a multifaceted challenge that requires a strategic, comprehensive approach to overcome. This entails not only addressing immediate hurdles such as cybersecurity and intellectual property protection but also cultivating a broader ecosystem conducive to innovation and digital growth. The foundational step toward a digital future involves bolstering the technological infrastructure to support the seamless integration of digital advances (Bozhkova, & Halytsia, 2022). Mytnyk et al.

(2023) highlight the importance of robust digital infrastructure as the backbone of digital transformation. This includes widespread internet access, reliable digital payment systems, and secure platforms for e-government services. Additionally, cybersecurity emerges as a paramount concern. With the increasing reliance on digital systems, safeguarding against cyber threats becomes crucial. On the legal front, adapting and modernizing the regulatory framework to align with digital advancements is crucial. This involves revising existing legislation and introducing new laws that cater to the nuances of the digital economy, such as e-commerce regulations, data protection laws, and guidelines for digital currencies. Protecting intellectual property (IP) in the digital age is another critical challenge. As highlighted by Peláez-Repiso et al. (2021), establishing a robust IP framework is essential for nurturing innovation, providing creators and innovators with the confidence that their inventions and works are safeguarded against infringement.

Organizational adaptability plays a vital role in the digital transformation journey. This requires government agencies and institutions to evolve, adopting new technologies and methodologies to improve efficiency and service delivery. Moreover, fostering an innovation-friendly business environment is key to stimulating digital growth. As Prina and Pentassuglia (2023) suggest, this can be achieved through policies that support startups and technology firms, such as tax incentives for R&D, streamlined regulatory procedures, and access to financing. The development of comprehensive national strategies for the digital economy's advancement is paramount (Khan et al., 2021). Such strategies should articulate clear visions, goals, and action plans to guide the digital transformation process across various sectors. They should identify priority areas for development, investment in digital skills training, and the creation of digital hubs to encourage collaboration between the public sector, private enterprises, and academia. An inclusive approach that involves all stakeholders—government, business, academia, civil society, and international partners—is essential for crafting and implementing effective digital strategies. Engaging a broad spectrum of perspectives can enrich policy-making processes, ensuring that digital transformation efforts are well-rounded and aligned with the needs and aspirations of all segments of society. For Ukraine, overcoming the challenges to a digital future necessitates a coordinated, strategic approach that addresses the technological, legal, and organizational barriers. By enhancing cybersecurity, modernizing the legal framework, fostering an innovation-friendly ecosystem, and developing comprehensive national strategies, Ukraine can fully leverage digital transformation's potential. Such efforts will not only drive economic growth but also enhance the quality of life for its citizens, positioning Ukraine as a vibrant, forward-looking digital economy on the global stage.

2.7. Implementing Digital Transformations to Enhance Information Security

In the contemporary digital era, the strategic implementation of digital transformations is paramount for enhancing information security and fostering economic development within Ukraine. This necessity arises from the evolving landscape of digital innovations

such as blockchain and AI, which, while offering immense potential for growth and efficiency, also introduce complexities in taxation and regulatory compliance. This extends the discussion by emphasizing the need for transparent taxation policies that can stimulate investments and provide a conducive environment for the burgeoning IT sector in Ukraine (Verbivska et al., 2023). The challenge lies not only in adopting these advanced technologies but also in ensuring that small and medium-sized enterprises (SMEs) within the IT sector have access to essential resources such as financial support, technical infrastructure, and personnel training. Such access is crucial for their stable growth and competitiveness on both a national and global scale (Matyushenko et al., 2021). Moreover, fostering collaboration with major IT companies can lead to the creation of innovative techno parks and incubators, further accelerating the development of new enterprises and competence centers dedicated to knowledge exchange.

Information security emerges as a critical concern amid these digital transformations. As Ukrainian enterprises embark on digitalization, the enhancement of cybersecurity systems and the implementation of robust identification and monitoring methods become indispensable. The application of IT solutions across various business processes not only automates and optimizes operations but also significantly reduces time and resource expenditure, thereby increasing overall efficiency. State support, coupled with the expertise of leading IT companies, is essential for Ukrainian enterprises to navigate the transition towards digitalization successfully. This includes adopting advanced IT technologies that can streamline and improve business processes, ultimately contributing to the country's economic resilience and security.

2.7.1. The strategic role of data analysis in information security

Data analysis plays a pivotal role within comprehensive information management systems, serving as a vital tool for monitoring internal processes, identifying inconsistencies, and detecting security breaches. By integrating data analytics with information security measures, enterprises can effectively identify, analyze, and mitigate potential threats, ensuring a high level of protection. Implementing robust information security contours within comprehensive information systems enables the creation of a powerful framework for safeguarding multi-profile enterprises in Ukraine. Quality monitoring systems for information security technology application in key management and accounting offices are crucial for assessing the effectiveness of digital transformations and identifying areas for further improvement.

2.7.2. Economic implications of information security technologies

The economic ramifications of implementing information security technologies extend beyond the immediate costs. Evaluating the economic return on investment is essential for comparing results and determining the effectiveness of these technologies in achieving economic resilience. Through predictive data analytics, Ukrainian businesses can anticipate economic trends and adapt accordingly, enhancing their preparedness for future challenges. Digital transformations, underpinned by advanced information

security technologies, are instrumental in ensuring the economic and information security of Ukraine. By fostering a digital environment that encourages the development of new technologies and enhances competitiveness, Ukraine can solidify its position as a leader in the digital age.

2.8. Aims and Objectives

The primary objectives of this study are outlined as follows:

- Investigate the Impact of Blockchain Technology on Enhancing the Accountability and Transparency of Fiscal Policies in Ukraine: This objective aims to investigate into how blockchain technology can revolutionize Ukraine's fiscal management, focusing on its potential to bolster accountability and transparency within fiscal operations.
- Assess the Influence of AI on Tax Collection Processes and Its Role in Mitigating Corruption: This involves evaluating AI's effectiveness in streamlining tax collection procedures, with a particular emphasis on its capacity to detect and prevent fraudulent activities, thereby reducing corruption within the fiscal system.
- Analyze the Compatibility of Global Digital Fiscal Innovations with Ukraine's Economic Framework: This objective seeks to understand how international trends in digital fiscal management can be adapted to fit the unique context of Ukraine's economy, identifying best practices that could be implemented.
- Identify Existing Literature Gaps Regarding the Adoption of Digital Technologies in Ukraine's Fiscal Policy: By examining the current body of research, this study aims to highlight areas where further investigation is needed to fully comprehend the implications of digital advancements on Ukraine's fiscal governance.

Based on the defined objectives, the study proposes the following hypotheses:

- H1: Implementing blockchain technology within Ukraine's fiscal system will significantly enhance process efficiency, reduce corruption levels, and increase transparency across fiscal operations.
- H2: The integration of AI into tax collection mechanisms will streamline procedures, minimize human error, and curtail opportunities for corrupt practices, thereby optimizing fiscal management.
- H3: Ukraine stands to benefit from adopting and customizing global digital fiscal innovations, which can lead to improved fiscal policy effectiveness and economic resilience.

2.9. Significance of the Study

The importance is to find the revolutionary power of digital breakthroughs to establish a financial climate that supports long-term, sustainable economic growth. Beyond theoretic ramifications, the practical aspects entail putting these technologies into practice to enhance fiscal procedures. This research sets out to explore the connections between the fiscal policies of Ukraine and the field of digital advances. By concentrating on certain technologies and their possible uses, the goal is to create a fiscal future that not only tackles past issues but also moves Ukraine closer to sustainable economic growth.

3. METHODS

Since the relationship between innovation in fiscal policy and economic development is an interdisciplinary field of research, it is best to take a broad approach that incorporates general theoretical methodologies. The study's theoretical foundation establishes the link between fiscal policy and economic sustainability as well as digital innovation in Ukraine's fiscal policy. Reputable sources of information will be gathered, such as databases maintained by international organizations, scholarly journals, and government reports. The examination will center on tax reforms, with a particular emphasis on how they connect with digital advancements to promote long-term economic growth. Particular focus will be placed on specific instances of digital tax system modifications, emphasizing both immediate advantages and difficulties. A critical assessment will be included, examining challenges encountered when putting digital tax changes into effect, including technological difficulties and stakeholder pushback.

4. RESULTS

4.1. Economic Implications of Digital and Tax Policy Reforms

The Unified Tax Code of Ukraine, enacted in 2011, has been the cornerstone of the country's taxation system, consolidating previously disparate tax laws into a single, comprehensive framework. This consolidation has facilitated more straightforward tax administration and compliance, enhancing fiscal stability and predictability. Amendments to the Tax Code, including those introduced by the Law "On stimulating the development of the digital economy in Ukraine," colloquially known as the Diia City², represent targeted efforts to align Ukraine's fiscal policies with the evolving digital economy. Unlike the misconception that Diia City introduces a new form of city tax, this legislation aims to foster a supportive environment for digital businesses through specific tax incentives and regulatory simplifications. It's critical to note that Ukraine employs a personal income tax system, and while there is no separate payroll tax, employers are responsible for withholding and remitting income taxes on behalf of their employees. The corporate income tax structure includes provisions for reduced rates and tax exemptions under certain conditions, particularly for IT and digital sector companies registered under the Diia City initiative.

The potential economic impact of these reforms is substantial. Projections suggest that, within the next decade, digital products and services could constitute approximately 70% of global value

2 The general legal framework of the Diia City regime is established by the Law of Ukraine No. 1667, "On stimulating the development of the digital economy in Ukraine"

Following the Law No. 1667, the status of Diia City resident can be obtained on an application basis.

The Law No. 1667 defines that the resident of Diia City shall be a legal entity registered on the territory of Ukraine under the procedure established by the legislation of Ukraine, regardless of its location and place of business activity. That is, foreign IT companies that want to take advantage of Diia City must register a legal entity in Ukraine.

creation, with digitally transformed businesses significantly contributing to the global GDP—an estimated increase from \$13.5 trillion in 2018 to \$53.3 trillion by 2023 (Babenko et al., 2020; Lagovska et al., 2020; Hrytsai, 2023). The Ukrainian IT sector, in particular, has demonstrated remarkable resilience, notably during the 2022 invasion, where it emerged as one of the few industries to experience growth in export volume (Trusova et al., 2021; IEEE, 2018). Furthermore, the implementation of digital VAT refunds since April 2017 exemplifies the government’s move towards digitizing its tax collection processes, thereby enhancing efficiency and transparency. This approach aligns with global trends towards digital VAT settlement, ensuring that VAT remains a steady contributor to Ukraine’s GDP (Yan et al., 2023; Sotnyk et al., 2023). An in-depth examination reveals that the Diia City main push is not merely tax reduction but the establishment of a conducive legal and fiscal environment for digital businesses. This involves a nuanced corporate income tax framework designed to incentivize the digital economy sector. However, clarity is needed on how these fiscal policies are synchronized with digital advancements to drive long-term economic growth effectively (Figure 2).

Since April 2017, exporters have had the choice of getting their VAT refund automatically. This means that the money they earned in VAT credits is returned to their bank accounts without any conditions. If we are being fair, it is important to note that some parts of electronic government have been around for a long time (Yan et al., 2023). For example, Article 201 of the Tax Code of Ukraine from 2011 to 2012 required big taxpayers to send special tax invoices for goods worth more than 10,000 hryvnias that were registered in the national register. In general, this method is the same as what is done around the world to slowly switch to digital VAT settlement, starting with approving a small group of users or a single area. Value-Added Tax (VAT) works concerning Ukraine’s Gross Domestic Product (GDP), the same and changes slightly from 2018 to 2023 as shown in Table 1 (Sotnyk et al., 2023).

The net balance of VAT with GDP shows how much VAT contributes to the total output of the economy. This is a measure of fiscal efficiency. Interestingly, this metric’s change stays within a fairly small range, spanning from 0.79% to 1.11%. This shows that VAT earnings have a steady link with the economy as a whole (Prina and Pentassuglia, 2023).

In the evolving landscape of Ukraine’s fiscal policy, significant strides have been made towards integrating digital technologies, particularly with the adoption of blockchain, to revolutionize fiscal operations. This transformative journey underscores Ukraine’s

commitment to fostering transparency, efficiency, and a corruption-resistant framework within its fiscal operations. The integration of these technologies marks a pivotal shift towards aligning Ukraine with global digital fiscal innovations, potentially setting a new benchmark for fiscal management that is both efficient and secure. The strategic deployment of blockchain technology within Ukraine’s fiscal operations exemplifies a significant leap towards enhancing operational transparency and combating corruption. By facilitating a tamper-proof and transparent ledger for transactions, blockchain technology can significantly streamline tax collection processes. The adoption of smart contracts further automates and secures tax collection, minimizing human intervention and the associated risks of discretionary manipulation. The Law “On Value Added Tax” outlines the VAT³ framework in Ukraine, emphasizing a consumption tax model that is pivotal to the country’s fiscal structure. The Unified Tax Code serves as the backbone of Ukraine’s tax system, providing a streamlined approach to tax legislation and ensuring uniform application across the board. Amendments and reforms are meticulously introduced through specific legislative acts, maintaining clarity and structure within the tax system (Manzhura et al., 2022). Addressing the structure of corporate income tax, the Diia City resourcefulness introduces a specialized regime for IT and digital sector companies, encouraging innovation and investment through reduced tax rates and possible exemptions. This nuanced approach requires clear articulation to ensure comprehensive understanding and compliance by the targeted businesses. Although the Diia City is an important step toward developing the digital economy, the data presented lacks detail and provides a general explanation of the tax revisions. More thorough explanation is required to show how tax reforms and digital innovations are clearly aligned, which is essential for long-term economic growth (Bieliaieva et al., 2023). The story would be strengthened by concrete instances of how these reforms effectively promote more investment, better business environments, and budgetary sustainability. To demonstrate the short- and long-term effects of these changes, a more thorough examination of the economic shift, development values, and years involved is necessary.

4.2. Analysis of Digital Changes

It is believed that the examination of digital modifications to the tax system is too cursory and that a closer look at particular instances and their immediate effects is necessary. One important measure of the economic importance of the digital revolution is the sectoral contribution of the Information and Communication Technologies (ICT) industry, which is expected to account for \$7.35 billion, or 4.5% of Ukraine’s GDP in 2022. To support the claim and offer a balanced viewpoint, a more thorough analysis of the digital infrastructure, talent distribution, and societal demand for digital services is required. Addressing Challenges

Table 1: VAT works for Ukraine’s growth

Period	VAT Receipts (UAH million)	GDP (UAH million)	Net balance of VAT with GDP (%)
2018	39.6	3561	1.11
2019	39.4	3975	0.99
2020	39.0	3908	1.00
2021	39.7	4277	0.93
2022	40.0	4659	0.86
2023	40.0	5088	0.79

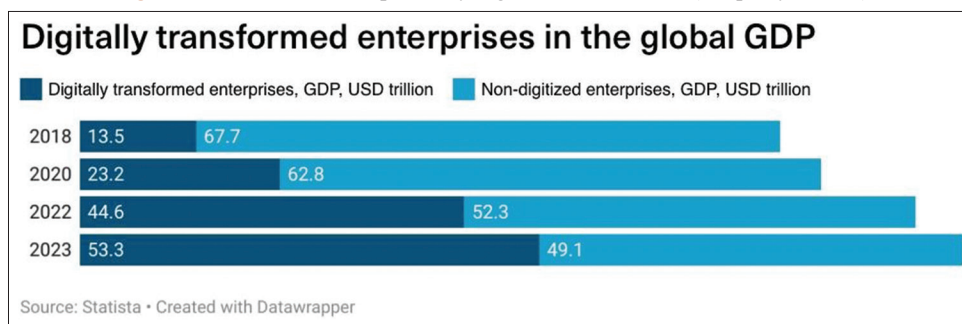
VAT: Digital value-added tax

3 Article 11. Final Provisions 11.1. The Law of Ukraine “On Value Added Tax” shall come into force on July 1, 1997.

11.2. Before bringing other legal acts into accord with norms of this Law, they shall be valid to the extent that does not contradict this Law.

11.4. Changes of the procedure in taxation by value added tax can be conducted only through introduction of changes to this Law.

Value added tax is an internal tax and cannot be regulated by international agreements’ norms except agreements ratified by the Supreme Rada of Ukraine before entering this Law into force.

Figure 2: Economic development by digital transformation (Krupianyk, 2023)

and Limitations: The section lacks critical evaluation regarding challenges and limitations encountered during the implementation of digital tax reforms. A more thorough examination is necessary to gain a deeper understanding of implemented innovations and their direct effects (Mytnyk et al., 2023; Lagodiienko et al., 2023). The tax cuts and revisions to digital policy place Ukraine in a strategic position, drawing comparisons with international projections that indicate during the next ten years, digital products will account for 70% of value creation. Still, the evidence is not quite clear on how tax reforms should be aligned with digital developments, so more detail is needed. A critical literature study comparison might offer a detailed perspective of best practices and potential obstacles experienced by other countries in comparable attempts, even while the potential economic benefit is stressed (Siegmann & Volkova, 2023). The data presented, including the estimated \$53.3 trillion that digitally transformed businesses would contribute to the global GDP by 2023, highlights the importance of Ukraine's activities. It is imperative that we critically assess any potential constraints as we negotiate the ramifications, particularly with relation to stakeholder resistance and unforeseen implementation challenges. Subsequent investigations may concentrate on enhancing these strategies, tackling detected constraints, and investigating supplementary approaches for enduring achievement in Ukraine's digital and financial metamorphosis.

5. DISCUSSION

Focusing on sustainable economic development, the results highlight the importance of digital technologies in driving long-term growth. Blockchain technology, as part of a broader suite of digital innovations, holds particular promise for enhancing the efficiency and integrity of tax collection mechanisms. The anticipated impact on Ukraine's GDP, with digital products projected to constitute a significant portion of value creation, highlights the transformative potential of these technologies. While the adoption of digital technologies marks a significant step forward, there remain challenges in fully integrating these innovations into Ukraine's fiscal framework. Further research is needed to explore the implementation process, stakeholder engagement, and the long-term impacts on Ukraine's economic landscape (Kotina et al., 2022; Nurgaliyeva et al., 2022). Additionally, examining the effectiveness of these policies in promoting investment, enhancing business environments, and contributing to budgetary sustainability will be crucial for informing future reforms.

The integration of digital technologies into Ukraine's fiscal policies—specifically through the Diia City initiative—highlights the government's commitment to leveraging digital innovation for economic development. Yet, for these reforms to yield the anticipated benefits, a clearer alignment between tax policies and digital advancements is necessary. While the related digital policy adjustments represent significant steps towards fostering a digital economy, challenges in implementation persist. This analysis should extend to stakeholder resistance, infrastructural limitations, and the need for a skilled workforce adept at navigating the digital landscape. A comparative study of international examples where digital fiscal innovations has been successfully integrated could provide critical learning points for Ukraine. Such an analysis would not only highlight best practices but also identify potential pitfalls and obstacles that could be mitigated in Ukraine's context. Future research should focus on evaluating the long-term impacts of these reforms on economic growth, investment, and the overall business environment.

6. CONCLUSION

Ukraine's efforts to achieve long-term economic growth through significant social change, most notably the recent adoption of the Diia City Tax Law, appear to have the potential to support a robust digital economy. With reduced payroll taxes and a distinct corporate income tax structure, the fiscal policies specifically designed for the IT industry seek to establish Ukraine as a competitive center for digital innovation. Long-term economic development depends on the convergence of digital innovations and tax changes; estimates suggest that in the next 10 years, digital items may account for 70% of value creation globally. Moreover, the argument delved into the pivotal role of the Unified Tax Code of Ukraine, enacted to consolidate various tax laws into a single, comprehensive framework, thereby streamlining tax administration and enhancing fiscal stability. It is evident that amendments to the Tax Code, including digital tax reforms, are meticulously introduced through specific laws aimed at refining the fiscal landscape to support the burgeoning digital economy.

The examination of personal income tax and the special corporate income tax structure under the Diia City has shed light on Ukraine's efforts to adapt its tax system to the demands of the digital age. By offering tax incentives and creating a special tax regime for IT and digital sector companies, Ukraine is actively fostering an environment that encourages investment and innovation in the

digital domain. This article has also addressed the critical need for clear communication and detailed explanation of tax reforms and digital policy adjustments to ensure their alignment with Ukraine's economic goals. The adoption of blockchain technology in fiscal operations presents a promising avenue for achieving a more transparent, efficient, and corruption-resistant tax collection system, marking a significant advancement in Ukraine's digital transformation journey. As Ukraine continues to navigate the complexities of integrating digital innovations into its fiscal policy, it becomes increasingly clear that this journey is pivotal not only for enhancing the country's fiscal operations but also for establishing a robust foundation for sustainable economic growth. Digital transformations and the use of AI can play a key role in ensuring the information and economic security of Ukraine. The insights drawn from this exploration emphasize the importance of continued research, dialogue, and critical assessment of both the challenges and opportunities that lie ahead. In essence, Ukraine's proactive approach towards embracing digital innovations, refining its tax legislation, and fostering a supportive environment for the digital economy exemplifies a forward-thinking strategy that other nations could look towards. This endeavor, though fraught with challenges, holds the promise of transforming Ukraine into a model of digital economic development, showcasing the transformative power of aligning fiscal policies with the imperatives of the digital era.

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