

Article

Research Question: To What Extent Does Digitalization Bring Opportunities to China in Global Economic Governance?

Yongshi Zheng ^{1,*}¹ Hong Kong Metropolitan University, Hong Kong, China

* Correspondence: Yongshi Zheng, Hong Kong Metropolitan University, Hong Kong, China

Abstract: This article explores how digitalization creates opportunities for China in the field of global economic governance. By examining China's digital economy development and its engagement in international cooperation frameworks, the study highlights three major dimensions: global trade governance, financial and monetary governance, and sustainable development governance. It argues that digital technologies—such as big data, cloud computing, artificial intelligence, and blockchain—are reshaping global governance mechanism's, facilitating international data sharing, enhancing crisis management, and improving policy evaluation. China's active role in multilateral initiatives, including G20, APEC, BRICS, and the WTO, demonstrates its efforts to contribute to global digital governance while addressing challenges like the digital divide and standardization. The research concludes that digitalization not only enriches China's domestic economic growth but also provides new pathways for China to engage in and influence global governance.

Keywords: digitalization; global economic governance; China; digital economy; international cooperation

1. Introduction

The progress and broad application of digital technologies have promoted the vigorous development of the digital economy, driving breakthroughs in global economic governance. The dominant international powers and intergovernmental organizations attach great importance to global digital governance. China, a prominent player in global digital development, has actively contributed to the international community. However, the digital divide also generates challenges related to global regulation and the establishment of common application standards. To address the issue of technological alienation and move toward a set of consensus-based management protocols and governance for the global good, there is a need for enhanced management of digital data. This essay will examine how digitalization presents potential for international economic governance in three areas. From a governance perspective, digital technology has expanded the scope of global economic governance and enriched the significance of global trade governance, monetary and financial governance, and sustainable development governance [1]. Digital technology has transformed global economic governance by introducing creative approaches, stimulating changes in areas such as international economic data sharing, risk mitigation, crisis management, and the evaluation of policy effectiveness. China recognizes its own characteristics in digital development and has put forward proposals to address the challenges of global digital governance.

Received: 18 August 2025

Revised: 30 August 2025

Accepted: 22 September 2025

Published: 23 September 2025



Copyright: © 2025 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

2. Background

2.1. China's Economic Growth and Digital Economy Development

China's economy demonstrated steady growth in 2022, with a gross domestic product (GDP) of 121,020.7 trillion yuan, representing a 3.0% increase compared to the previous year at constant prices [2]. Despite facing global economic uncertainties and domestic challenges, the national economy maintained resilience and continued to develop steadily. In recent years, the rapid advancement of digital technologies—such as the Internet, big data, cloud computing, blockchain, and artificial intelligence—has accelerated innovation across multiple sectors and become deeply integrated into social and economic development [3].

The digital economy has emerged as a significant driver of growth, contributing 39.8% of the national GDP. By 2021, it reached 45.5 trillion yuan, positioning China as the world's second-largest digital economy. The expansion of digital sectors has also led to the creation of 97 new “digital occupations,” reflecting the increasing demand for specialized skills in emerging technologies. E-commerce and mobile payment platforms continue to lead globally in transaction volume and scale, illustrating the transformative impact of digitalization on everyday commerce and financial inclusion [4].

2.2. International Digital Cooperation and Data Security Initiatives

China has actively engaged in promoting international cooperation in the digital economy, with a particular focus on data security and cross-border digital trade. In March 2021, China and the Secretariat of the League of Arab States convened a meeting to discuss collaborative measures in data security, launching the China-Arab Data Security Cooperation Initiative. This agreement made the Arab region the first in the world to establish a joint digital data security framework with China, setting a precedent for international digital governance [5].

Subsequently, China established dialogue mechanisms with countries in Central and Eastern Europe to facilitate e-commerce collaboration. In 2021, it submitted a formal request to join the Digital Economy Partnership Agreement (DEPA), reflecting its commitment to multilateral digital economic frameworks. In June 2022, the China plus Five Central Asian States Data Security Cooperation Initiative was adopted, further expanding regional cooperation on digital governance [6]. These initiatives demonstrate China's proactive approach to promoting secure and transparent digital trade and building trust among international partners.

2.3. Multilateral Engagement and Regional Digital Collaboration

China's involvement in multilateral organizations has played a crucial role in shaping regional and global digital governance. By actively participating in forums such as the G20, APEC, BRICS, and the WTO, China has advocated for collaborative approaches to digital economic development, emphasizing inclusivity, transparency, and efficiency.

At the 14th BRICS Summit, the Framework for BRICS Digital Economy Partnership was approved, providing a strategic roadmap for digital cooperation among emerging economies. Beyond multilateral frameworks, China has also expanded digital collaboration across diverse regions, including the Asia-Pacific, the Middle East, Southeast Asia, Central and Eastern Europe, and Central Asia [7]. These initiatives aim to leverage digital technologies to enhance governance efficiency, strengthen economic integration, and facilitate knowledge sharing in areas such as e-commerce, data management, and digital infrastructure. By promoting regional collaboration and supporting global digital initiatives, China contributes to the ongoing evolution of international digital governance [8].

3. Global Digital Trade Governance

3.1. Expansion of Digital Commerce and Cross-Border Connectivity

The rapid development of digital commerce has fundamentally transformed global trade governance by creating a highly interconnected international marketplace. Digital platforms powered by big data, cloud computing, and advanced analytics enable businesses to efficiently match supply with demand across borders, reducing transaction costs and time delays. Chinese digital technology service providers have contributed significantly to the expansion of digital economies in countries along key trade corridors, offering technological support, infrastructure solutions, and digital logistics expertise [9].

Major enterprises such as JD.com, Alibaba, and Tencent exemplify the integration of digital innovation with traditional commerce. Through their cross-border e-commerce initiatives, these companies not only expand into new international markets but also generate substantial employment opportunities and facilitate technology transfer. For instance, JD Indonesia Station, a collaboration between Jingdong Group and the Indonesian government, is one of the largest cross-border e-commerce hubs globally [10]. It provides a seamless shopping experience for consumers, enhances local logistics capabilities, and stimulates ancillary industries such as warehousing, distribution, and digital payment services. The “Internet Plus” strategy further accelerates this integration, allowing enterprises to leverage Internet technologies to innovate business models, optimize supply chains, and create new ecosystems for trade and investment.

Furthermore, digital trade facilitates micro, small, and medium-sized enterprises (MSMEs) to participate in international commerce, which was previously limited due to scale, infrastructure, or financial barriers. By providing accessible online platforms, payment systems, and cross-border logistics, digital technologies lower entry barriers and democratize global trade participation [11].

3.2. Strengthening Industrial Capacity and Service Quality

The expansion of digital trade has driven Chinese firms to develop robust industrial capabilities and high-quality service standards, which in turn enhance their competitiveness in emerging markets. By combining cost-effective products with reliable operational support, enterprises have improved digital convenience for global consumers and contributed to economic development in host countries.

Advanced technologies such as artificial intelligence, blockchain, and the Internet of Things have accelerated the digital transformation of service trade [12]. These technologies optimize supply chain management, improve inventory forecasting, and enable secure, traceable transactions across borders. The adoption of these innovations has strengthened the capacity of enterprises to respond to international demand fluctuations, manage risk, and maintain high-quality standards in complex global markets [13].

International trends also indicate that digital technology will continue to drive global trade growth. Analysts estimate that technology-enabled trade could increase the annual growth rate of global commerce by 1.8 to 2 percentage points over the next decade. Moreover, digital services—including cloud computing, e-payment systems, and online logistics—have become essential components of modern trade. By integrating these services, firms enhance operational efficiency, reduce trade costs, and facilitate access to previously underserved markets, thereby creating new avenues for economic development and regional connectivity [14].

3.3. Governance Challenges and International Collaboration

While digital trade provides numerous opportunities, it also introduces governance challenges that require proactive policy responses. Key issues include uneven competitiveness among enterprises, insufficient regulatory frameworks for cross-border digital commerce, and limited influence in shaping international trade standards. Ensuring fair

competition, secure transactions, and consumer protection in a highly digitalized environment necessitates comprehensive oversight and international coordination.

Engagement in multilateral platforms such as the G20, APEC, and the World Trade Organization is crucial for establishing global standards for digital trade, cybersecurity, data governance, and privacy protection [15]. By actively participating in these initiatives, countries can influence international rule-making, promote equitable governance structures, and facilitate a more transparent and inclusive digital trade ecosystem. Emerging economies can particularly benefit from shared knowledge, technical assistance, and cooperative mechanisms to enhance their competitiveness and decision-making power in the digital economy.

China's extensive domestic market, combined with rich data resources and experience in digital trade, provides a strong foundation for contributing to global digital governance. Through strategic international partnerships and collaboration with multinational institutions, China and other participating nations can jointly develop standards, frameworks, and protocols that promote sustainable, secure, and equitable growth in global digital commerce [16]. By addressing governance gaps and leveraging technological innovation, countries can maximize the potential of digital trade while mitigating associated risks, ensuring that global economic development remains inclusive, resilient, and adaptive to future technological advancements.

4. Global Digital Financial Governance

4.1. Evolution of Digital Finance and Cross-Border Payment Systems

The advent of digital finance has revolutionized traditional financial systems, enabling more efficient and transparent cross-border payment settlements. Blockchain technology, as a decentralized and tamper-proof system, allows financial transactions to be recorded in a traceable and secure manner, providing strong support for payment oversight and privacy protection. Electronic currencies, including central bank digital currencies (CBDCs) and private digital tokens, challenge the conventional dominance of paper-based currency systems. As a result, traditional banking and insurance institutions face increasing competition from fintech companies that leverage advanced technologies to offer innovative financial services.

The widespread adoption of network technologies and mobile finance platforms has interconnected financial relationships among countries, corporations, and individuals. These developments facilitate real-time payments, automated clearing and settlement, and enhanced transparency in financial flows [17]. Emerging economies are increasingly participating in these digital financial networks, which reduces the barriers to entry for small enterprises and underbanked populations. By fostering financial inclusion, digital finance contributes to equitable economic participation on a global scale.

4.2. Digital Finance and Inclusive Economic Development

Digital finance plays a pivotal role in promoting inclusive economic growth, particularly in developing countries. China's ICT industry has expanded into more than 170 countries by providing low-cost, accessible technology solutions, significantly supporting poverty alleviation and industrial development along major trade corridors. Exporting digital expertise, innovative management practices, and technological solutions enables recipient countries to improve production efficiency, access new financial services, and stimulate local economic growth.

Empirical evidence suggests that increases in fintech adoption are associated with a 10%–20% reduction in poverty levels. Access to mobile banking, digital payment platforms, and online investment tools empowers individuals to save, invest in education, and engage in productive economic activities. Moreover, digital finance facilitates micro-finance programs, low-interest loans, and peer-to-peer lending, allowing previously excluded populations to participate in financial markets. These developments highlight the

transformative potential of digital finance in enhancing economic equity, promoting sustainable growth, and strengthening regional financial resilience.

4.3. Governance Challenges and International Collaboration

Despite its benefits, the global digital financial system faces significant governance challenges. Risks include technological vulnerabilities, potential illicit usage, and threats to financial stability and monetary sovereignty. High-profile incidents such as the Mt. Gox and Coincheck cyberattacks in Japan, which resulted in approximately 100 billion yen in losses, underscore the importance of robust cybersecurity and regulatory oversight. Establishing local regulatory frameworks and international cooperation mechanisms is crucial to mitigate these risks and ensure secure and stable digital currency operations.

International collaboration through multilateral initiatives, such as the Central Bank Digital Currency (CBDC) Bridge, provides opportunities for cross-border regulatory alignment and joint development of best practices. Participation in global platforms allows countries to contribute to the establishment of governance standards for digital currencies, cybersecurity, data privacy, and financial inclusion. Approaches emphasizing equality, transparency, and mutual benefit are particularly valued by developing nations, fostering cooperative engagement and strengthening emerging economies' influence in digital financial governance.

Overall, while digital finance presents challenges, it offers unprecedented opportunities to stimulate innovation in the financial sector, promote integration in global markets, and enhance participation in the governance of international financial systems. Strategic collaboration, technological innovation, and comprehensive regulation will be key to maximizing the benefits of digital finance while minimizing systemic risks.

5. Global Digital Sustainable Development Governance

5.1. Digital Technologies in Urban Sustainability

Rapid urbanization worldwide has imposed significant pressures on city infrastructure, including traffic congestion, environmental pollution, resource scarcity, and waste management. To address these challenges, urban governance has increasingly incorporated advanced digital technologies, ranging from Internet of Things (IoT) sensor networks, big data analytics, artificial intelligence (AI), to cloud computing platforms. These technologies enable real-time monitoring of traffic flows, energy consumption, air quality, and water usage, providing urban planners with data-driven insights to optimize city management.

For instance, smart traffic management systems in cities like Singapore and Shanghai use AI algorithms to adjust traffic light timing based on congestion patterns, reducing average commute times and vehicle emissions. Similarly, IoT-enabled waste management systems allow cities to dynamically optimize garbage collection routes, lowering fuel consumption and labor costs. Beyond efficiency improvements, digital urban monitoring enhances disaster preparedness, allowing governments to predict floods, extreme weather events, or heatwaves and implement preventive measures in advance.

The European Union's Destination Earth project exemplifies global efforts to leverage digital twins for environmental governance. By creating highly accurate, real-time digital representations of the planet, governments can simulate environmental changes and human activities to design sustainable urban strategies. These tools also support global collaboration by providing standardized environmental data that can inform international climate policy decisions. In addition, predictive modeling of urban resource consumption enables equitable allocation of energy, water, and other critical resources, promoting more sustainable and resilient cities.

5.2. Digital Economy and Carbon Emission Reduction

The digital economy plays a pivotal role in mitigating environmental impact by improving industrial efficiency, reducing energy consumption, and promoting low-carbon growth. The ICT industry enhances the productivity of multiple sectors, indirectly contributing to global carbon emission reduction. Private sector initiatives showcase the practical application of digital solutions for sustainability. For example, Alibaba Cloud's "Zero Carbon Cloud" initiative implements high-performance computing, renewable energy utilization, AI-supported energy management, and liquid cooling technologies. In 2020, the company's main data center achieved a 266% increase in renewable energy use compared to the previous year, resulting in a 127% year-on-year reduction in carbon dioxide emissions, equivalent to 300,000 tons.

Internationally, cloud computing platforms such as Amazon Web Services (AWS) demonstrate substantial energy efficiency improvements, reportedly being 3.6 times more efficient than traditional U.S. enterprise data centers and reducing the carbon footprint of on-premises infrastructure by 88%. These examples illustrate how digital infrastructure and platforms facilitate the sharing and efficient utilization of resources, while minimizing environmental costs.

In addition, smart energy management systems integrate AI and IoT to dynamically adjust electricity consumption across manufacturing, construction, and transportation sectors. Digital monitoring of supply chains allows companies to optimize logistics routes and reduce fuel usage. Research projects predict that the ICT sector alone could contribute up to 20% of global carbon reduction in the next decade by improving efficiency across allied industries. However, challenges such as e-waste management, the ethical use of data, digital literacy gaps, and the digital divide remain critical obstacles to achieving a fully sustainable digital economy.

5.3. International Cooperation and Policy Integration for Sustainable Digital Governance

Global environmental challenges, such as climate change, biodiversity loss, and water scarcity, transcend national boundaries and necessitate coordinated international action. Digital governance facilitates the collection, analysis, and exchange of critical data across countries, enabling collaborative solutions. Countries like China and ASEAN members are exploring joint initiatives to harmonize digital economy policies, promote industrial development, and facilitate digital transformation in enterprises, particularly small and medium-sized enterprises (SMEs).

Establishing expert working groups and cross-border think tanks enables governments to formulate effective policies, implement capacity-building programs, and monitor the environmental and economic impact of digitalization. Enterprises play a central role in this ecosystem, driving innovation and fostering collaboration in cloud computing, artificial intelligence, cross-border e-commerce, and telecommunications infrastructure.

Integrated digital solutions can optimize energy usage in sectors such as transportation, construction, agriculture, and manufacturing. For example, IoT-enabled smart grids allow real-time adjustment of energy production and consumption, reducing wastage and supporting renewable energy integration. Blockchain technology ensures transparent tracking of carbon credits, supply chain emissions, and resource usage. Through international collaboration, countries can develop unified standards for digital sustainability, facilitate knowledge sharing, and support global efforts to achieve carbon neutrality and other Sustainable Development Goals (SDGs).

By leveraging these digital tools and collaborative frameworks, nations can not only advance sustainable development but also assume leadership roles in global digital governance, setting standards for responsible technology use, energy efficiency, and equitable access to digital resources. This convergence of technological innovation, policy coordination, and private sector engagement underscores the transformative potential of the digital economy in achieving global sustainability objectives.

6. Conclusion

In summary, the digital economy has enhanced traditional economic development models and facilitated rapid economic progress. Digitization provides significant opportunities for global economic governance in three key areas. Digital technology has expanded the scope of global economic governance and enriched the dimensions of trade governance, monetary and financial governance, and sustainable development governance. The digital economy promotes international trade and investment, improving accessibility to financial services and strengthening conventional economic structures.

Furthermore, digital technology enhances efficiency in environmental protection and supports the sustainable use of energy resources, fostering the development of a low-carbon economy and renewable energy sources. With the rapid growth of global data processing, conventional digital governance structures are increasingly inadequate to manage these advanced transformations. Emerging digital risks and challenges have garnered significant international attention.

To fully harness the benefits of digitization, it is necessary to modernize national governance systems and establish comprehensive digital mechanisms. The importance of global digital governance continues to grow, with active participation in shaping governance practices helping to create a more equitable, inclusive, and practical framework for addressing global digital challenges.

References

1. W. N. Dunn, *Public policy analysis: An integrated approach*, Routledge, 2015, doi: 10.4324/9781315663012.
2. M. M. Hasan, Y. Lajuan, and S. Khan, "Promoting China's inclusive finance through digital financial services," *Global Business Review*, vol. 23, no. 4, pp. 984-1006, 2022, doi: 10.1177/0972150919895348.
3. S. Kloppenburg, A. Gupta, S. R. Kruk, S. Makris, R. Bergsvik, P. Korenhof, et al., "Scrutinizing environmental governance in a digital age: New ways of seeing, participating, and intervening," *One Earth*, vol. 5, no. 3, pp. 232-241, 2022, doi: 10.1016/j.oneear.2022.02.004.
4. M. Larionova and A. Shelepov, "Emerging regulation for the digital economy: Challenges and opportunities for multilateral global governance," *International Organisations Research Journal*, vol. 16, no. 1, pp. 29-63, 2021, doi: 10.17323/1996-7845-2021-01-02.
5. P. Voosen, "Europe builds 'digital twin' of Earth to hone climate forecasts," 2020, doi: 10.1126/science.370.6512.16.
6. Y. Ye, S. Chen, and C. Li, "Financial technology as a driver of poverty alleviation in China: Evidence from an innovative regression approach," *Journal of Innovation & Knowledge*, vol. 7, no. 1, 100164, 2022, doi: 10.1016/j.jik.2022.100164.
7. J. Zhu, W. Lan, and X. Zhang, "Geographic proximity, supply chain and organizational glocalization: China's e-commerce investments in Indonesia," *PloS one*, vol. 16, no. 9, e0256837, 2021, doi: 10.1371/journal.pone.0256837.
8. S. Zhao, Y. Zhang, H. Iftikhar, A. Ullah, J. Mao, and T. Wang, "Dynamic influence of digital and technological advancement on sustainable economic growth in Belt and road initiative (BRI) countries," *Sustainability*, vol. 14, no. 23, 15782, 2022, doi: 10.3390/su142315782.
9. V. Bon, "The digitalization-economic growth relationship in developing countries and the role of governance," *Scientific Annals of Economics and Business*, vol. 68, no. 4, pp. 481-493, 2021, doi: 10.47743/saeb-2021-0028.
10. S. Batool, S. A. Gill, S. Javaid, and A. J. Khan, "Good governance via E-Governance: moving towards digitalization for a digital economy," *Review of applied management and social sciences*, vol. 4, no. 4, pp. 823-836, 2021, doi: 10.47067/ramss.v4i4.186.
11. L. Yu, "Global Economic Governance in the Digital Economy Era: Features, Influences, and Ways," *J. WTO & China*, vol. 13, pp. 95, 2023.
12. M. Sinha, S. Roy, and D. Tirtosuharto, "Digitalization and economic development: lessons from globalized developing countries," *Studies in Economics and Finance*, vol. 42, no. 2, pp. 289-305, 2025, doi: 10.1108/SEF-12-2023-0701.
13. J. Xu, S. She, and W. Liu, "Role of digitalization in environment, social and governance, and sustainability: Review-based study for implications," *Frontiers in psychology*, vol. 13, 961057, 2022, doi: 10.3389/fpsyg.2022.961057.
14. T. Bielialov, I. Kalina, V. Goi, O. Kravchenko, and N. Shyshpanova, "Global experience of digitalization of economic processes in the context of transformation," *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, vol. 8, no. 6, p. 10, 2023.
15. K. Jia and S. Chen, "Global digital governance: paradigm shift and an analytical framework," *Global Public Policy and Governance*, vol. 2, no. 3, pp. 283-305, 2022, doi: 10.1007/s43508-022-00047-w.
16. D. Lorberg and H. Janusch, "Digitalization, Transnationalization, and Transformation of the Global Economy: A Theoretical Explanation," *Transnational Corporations Review*, 200146, 2025, doi: 10.1016/j.tncr.2025.200146.

17. A. Aleksandrova, Y. Truntsevsky, and M. Polutova, "Digitalization and its impact on economic growth," *Brazilian Journal of Political Economy*, vol. 42, no. 2, pp. 424-441, 2022, doi: 10.1590/0101-31572022-3306.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of GBP and/or the editor(s). GBP and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.