The Impact of Digital Economy on Traditional Economic Models in China and The United States

Yuhan Fu

Art and Science, Queen's University, Kingston, Canada

846220993@qq.com

Abstract. With the rapid development of digital technology, the digital economy has become an important engine of global economic growth. As leaders in the global digital economy, China and the United States have their own characteristics in terms of technological innovation, market size and policy environment. At the same time, the digital economy has had a profound impact on the traditional economic model. This paper compares and analyzes the impact of the digital economy of China and the United States on the traditional economic model, and explores their similarities and differences in industrial structure, employment market and business model. The study found that the digital economy of China and the United States has promoted the upgrading of traditional industries, improved production efficiency, and spawned new business models such as platform economy. However, the United States pays more attention to original technology research and development, while China has achieved rapid popularization of the digital economy with a huge user base and policy support. In addition, China and the United States face common challenges in data security, market competition and the digital divide. In the future, the digital economy of China and the United States will continue to deepen competition and cooperation in technological innovation, globalization and sustainable development.

Keywords: Digital economy; traditional economic model; digital transformation.

1. Introduction

As global leaders in the digital economy, China and the United States are at the forefront of technological innovation, market size, and application scenarios. The rapid development of digital technologies—such as artificial intelligence, big data, cloud computing, and 5G—is reshaping traditional economic models and driving global transformation. The U.S., with its strong innovation ecosystem and capital markets, is home to tech giants like Google, Apple, Amazon, and Microsoft, which dominate the global digital landscape. Meanwhile, China, leveraging its vast market, advanced internet infrastructure, and supportive policies, has seen rapid growth in mobile payments, e-commerce, social media, and smart manufacturing, giving rise to global players like Alibaba, Tencent, ByteDance, and Huawei.

The digital economy has transformed traditional industries and created new business models. For instance, the platform economy has blurred industry boundaries, while the sharing and gig economies are reshaping labor markets. Digital technologies have also enabled smart manufacturing, personalized services, and precision agriculture. However, challenges such as data security, privacy concerns, market competition, and the digital divide remain critical, particularly in China and the U.S. By comparing the two nations' approaches, we can better understand how digital technology drives economic transformation.

2. Analysis of the impact of digital economy on traditional economy

2.1. Structural change

2.1.1 China: Government-led promotion of industrial digitization

The government-led promotion of digital digitization mainly strengthens policy deployment, supports resources such as land, talents, and capital, and focuses on building industrial characteristic landmarks and park carriers, so as to strengthen industrial synergy and agglomeration. The Chinese

government actively promotes the digital upgrading of industries, and uses the "new infrastructure" strategy (5G, AI, cloud computing, industrial Internet) to accelerate the digital transformation of traditional industries [1]. From the perspective of manufacturing industry, agriculture and retail industries, China's intelligent manufacturing is developing rapidly, with Huawei and Midea Group promoting "Industry 4.0" technology to make production more intelligent; Digital agriculture is rapidly developing, such as Alibaba's "Digital Countryside" plan, which uses big data and the Internet of Things to help farmers plant accurately and improve agricultural production efficiency; E-commerce platforms dominate the market, such as Taobao, JD.com, and Pinduoduo, promoting the transformation of offline retail to a "new retail" model.

2.1.2 The United States: Market-led promotion of industrial digitization

The market-led promotion of industrial digitization is mainly dominated by leading enterprises to lead the development direction of the cluster industry, open up technology, data, supply chain, market and other resources, give full play to the head goose effect, focus on the key technologies and core businesses of leading enterprises, promote collaborative innovation guided by market demand, and gather upstream and downstream enterprises. The development of the digital economy in the United States is mainly driven by enterprises, and free market competition has given rise to multiple technology giants. From the comparison of manufacturing industry, agriculture and retail industries, companies such as Boeing and General Electric utilize big data and AI to optimize their supply chains and improve production efficiency; American companies such as John Deere have developed intelligent agricultural machinery, utilizing technologies such as GPS, drones, and AI to improve the level of agricultural mechanization; Amazon optimizes its supply chain and improves consumer experience through big data recommendation systems and intelligent warehousing technology.

2.2. Changes in the market competition landscape

2.2.1 China: Platform economy dominates the market

Internet giants such as Alibaba, Tencent, ByteDance and other companies dominate the market, forming a "super platform" economy [2]. Due to strict government regulation, the digital economy is mainly dominated by local enterprises, such as TikTok, which is expanding rapidly in the international market competition. The local market has formed a mixed model of "national team+private technology companies", with Huawei and DJI playing important roles in technological innovation.

2.2.2 US: Global competition among tech giants

American tech giants such as Google, Amazon, Facebook, Microsoft and Apple control the global technology ecosystem, forming a digital economy oligopoly [3]. Technology companies rely on data-driven precision marketing, such as Facebook's advertising system utilizing big data for personalized recommendations. The US government has less direct intervention in the technology market, but anti-monopoly regulation has been strengthened in recent years, such as investigations into Google, Amazon, and Facebook [4].

2.3. Changes in the labor market

2.3.1 China: Digital economy creates new job opportunities

The flourishing digital economy in various fields has led to a strong demand for digital talents, setting up a broad stage for career development and job opportunities. For example, there has been a significant increase in flexible employment i.e., takeaway riders, e-commerce anchors, short video creators [5]. Automated factories reduce the demand for low-end labor, but high skilled positions increase, intensified the transformation and upgrading of traditional manufacturing industries. Digital economy also promotes the development of "new professions" such as artificial intelligence engineers, data analysts, etc.

2.3.2 United States: Automation replaces traditional jobs

According to a recent report by investment bank Goldman Sachs, a "major disruption" may be on the horizon in the global labor market, with artificial intelligence (AI) affecting the equivalent of 300 million full-time jobs. In the U.S. and Europe, two-thirds of jobs can be automated, at least to some extent. Automation leads to unemployment risk and the rise of remote work: Amazon warehouses and McDonald's self-service ordering machines reduce low skilled jobs [6]; Silicon Valley companies such as Google and Microsoft are promoting a remote work culture and influencing traditional office models. Digital skills have become a new threshold for employment: the demand for high skilled talents such as data science, artificial intelligence, and network security has surged.

2.4. Financial system reform

2.4.1 China: Digital payments are fully popularized

China's digital financial industry has covered payment, credit, investment, insurance, credit and other businesses, especially in the field of mobile payment, and has become one of the countries with the most active financial transactions, the most convenient payment, the lowest cost and the highest efficiency in the world. For example, WeChat payment and Alipay occupied the payment market, and cash transactions decreased [7]; Pilot promotion of digital RMB to promote a cashless society; Financial technology companies provide online credit and wealth management services.

2.4.2 United States: Fintech and Cryptocurrency Development

In the United States, credit cards still dominate, but digital payments such as Apple Pay and Google Pay are developing rapidly. The markets for cryptocurrencies such as Bitcoin and Ethereum are huge, and the United States has relatively relaxed regulations on decentralized finance [8]. The rise of Internet banking, such as Chime and Robin Hood, provides zero fee transactions.

2.5. Government policies and regulation

2.5.1 China: Government led, strict regulation

China has strengthened the regulation of the digital economy in the following three aspects. Firstly,implement the Data Security Law and require local storage of data to strengthen data security [9]. Secondly,regulating Alibaba and Tencent to restrict tech giants from abusing their market advantages. Thirdly, promoting new infrastructure in 5G, AI, Cloud computing and other digital infrastructure.

2.5.2 United States: Market regulation, strengthened anti-monopoly measures

In the United States, technology companies develop independently, with less direct government intervention. There has been an increase in anti-monopoly investigations, such as lawsuits against Facebook and Amazon.

3. Comparison of the Impact of Digital Economy on Traditional Economy between China and the United States

3.1. The similarities

The manufacturing, retail and financial industries of both countries have been profoundly affected by digitalization. Platform economy and sharing economy models have become mainstream, improving the efficiency of resource allocation. Digital transformation is an important strategy for both countries to enhance their global competitiveness.

3.2. The differences

3.2.1 Technology-oriented vs. market-oriented

The US digital economy mainly relies on high-end technology research and development, such as artificial intelligence and chip manufacturing, while China focuses more on market size and business model innovation to drive growth.

3.2.2 Degree of digitalization

The US digital economy developed earlier, the industry has a higher degree of digitalization, and the technology application is more in-depth; China's digital economy has grown rapidly, but it is still in the stage of accelerating the integration of traditional industries.

3.2.3 Policy and regulation

The US digital economy develops in a free market environment, and government regulation is relatively loose, while the Chinese government pays more attention to the standardized management of the digital economy and strengthens data security and industry supervision.

3.2.4 Enterprise innovation model

US companies tend to rely more on cutting-edge technological innovation, such as Tesla's breakthroughs in smart cars and autonomous driving, while Chinese companies focus more on application innovation, such as Alibaba and Tencent using mobile payments and social e-commerce to build ecosystems.

3.2.5 Digital infrastructure

China has a fast development speed and wide application in 5G, mobile payments, smart cities, etc., while the United States has more advantages in cloud computing and other aspects.

4. Summary

At present, emerging industries represented by digital technology and intelligent manufacturing are breaking through the walls of traditional industries. The digital economy has had a disruptive impact on our lives, not only in terms of lifestyle, but also in the way we produce. In the era of digital economy, actively moving towards digital transformation is a new challenge, a new opportunity, and a new mission for the future development of traditional industries. This paper compares and analyzes the impact of the digital economy of China and the United States on the traditional economic model, and explores their similarities and differences in industrial structure, employment market and business model. In addition, China and the United States face common challenges in data security, market competition and the digital divide.

In the future, the digital economy of China and the United States will continue to deepen competition and cooperation in technological innovation, globalization and sustainable development. Both China and the United States should strengthen the transformation and upgrading of traditional industries and the cultivation and development of the digital economy from the following aspects. Firstly, strengthen scientific and technological innovation and promote independent research and development of digital technologies. Secondly, accelerate the digital transformation of traditional enterprises and realize the full process digitalization of production, logistics and sales. Thirdly, improve the construction of digital infrastructure and promote the development of platform economy and sharing economy. Fourth, pay attention to data security and privacy protection, and establish and improve the norms for the development of digital economy.

References

[1] National Development and Reform Commission. The 14th Five-Year Plan for Digital Economy Development. Beijing: NDRC, 2022.

[2] China Academy of Information and Communications Technology. China Digital Economy Development White Paper. Beijing: CAICT, 2017.

[3] Chinese Academy of Social Sciences. Digital Strategic Competition Between China and the United States in the Digital Age. Beijing: CASS, 2023.

[4] China Academy of Information and Communications Technology. Global Digital Economy White Paper. Beijing: CAICT, 2024

[5] China State Council. Outline of China's Digital Economy Development Strategy. Beijing: State Council, 2020.

[6] Review and Prospect of Research on Digital Economy and Economic Growth. Shenzhen: Shenzhen Academy of Social Sciences, 2022.

[7] China Academy of Information and Communications Technology. China Digital Economy Development White Paper. Beijing: CAICT, 2021.

[8] Huang, Hao, and Yao Renfang. Accounting for the Scale of Digital Economy: Integrating National Accounts and Growth Accounting Frameworks. Economic Perspectives, 2024, 1: 74-95

[9] Zhou Hui. Why is Digital Economy Legislation Important. Caijing Magazine, May 2019.